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With Which Is Combined

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News Print Contract Prices Not Yet Decided

Leading Executives Encounter Many Difficulties in Endeavoring to Reach Practical Agreement To Prevent Continuance of Price Cutting War—Abitibi Directors Pass Regular Quarterly Dividend on Common Stock in View of Unstable Conditions —Newsprint Institute of Canada Formed

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., December 24, 1928.—The fact that up to the time of writing no news has been available as to the price of news print for the forthcoming year is substantial evidence in itself of the difficulties which news print executives here have been up against in their endeavors to carry to a practical conclusion the agreement to pool orders and prevent a continuance of price cutting. It can now be stated that $55 per ton was the price which it was hoped to establish, and it can also be stated that if this price is not achieved, the year 1929 is going to be a hard if not disastrous one for some of the companies, despite the fact that the actual volume of production and sales of news print establishes a new record.

The first actual casualty has already been announced, for the directors of the Abitibi Power and Paper Company have passed the regular quarterly dividend of $1 on the common stock, which dividend was initiated after the merger with the Spanish River Company and the subdivision of the old Abitibi stock on a two-for-one basis. It was announced that the dividend had been passed "in view of the unstable conditions in the news print industry."

It is expected that other companies will follow suit, although of course this may be averted if the price situation is settled satisfactorily during the present week. The action of the Abitibi directors may only be a precautionary one pending developments, but it is taken as an indication that prospects are none too favorable.

The stumbling block, as has already been stated, is the long-term contract entered into with the Hearst publications by the International Paper Company, which is stated to be at or about $51.75 per ton. It is believed that attempts have been made to secure a revision of this contract. Among those not actually *au fait* with the secret discussion between the news print executives, two statements by the International Paper Company have proved puzzling. One is the statement advising customers that in future it will not deviate from the established policy of a uniform price for all its customers. The other is its advertised statement in trade papers dealing with the negotiations in regard to the crisis which the industry is facing in Canada and adding, "Under these conditions, and as no definite decision has yet been reached, it is impossible to make a definite price announcement as to 1929."

There are some other difficulties besides those of price, and although these other difficulties are secondary, they are none the less hard to solve. There is, for instance, the question of distributing orders, so that all the mills may be kept going at an even percentage of capacity. As there are slight differences in grade between the different mills, customers used to a particular grade may object to uneven quality of product, or the mills may have to change methods or equipment to fill orders allotted to them satisfactorily. Then again, there is the difference in haulage between mills and customers as between the different mills.

Meanwhile the announcement is made of the formation of the Newsprint Institute of Canada, which will occupy the same offices as the Canadian Newsprint Company. While the purpose of this Institute has not been stated, it is believed that its purpose will be to carry out the agreement arrived at as to distribution of orders and other matters.

Higher Earnings for Wayagamack

The Wayagamack Pulp and Paper Company's annual report, just issued, shows that net earnings available for dividends on the capital stock as at November 30 are somewhat higher than those for the preceding year, this despite the unsettled conditions prevailing in the news print industry during the period. This improvement in earnings is understood to be directly due to the favorable situation in the sulphate pulp and kraft paper markets, which represent the major portion of the company's output.

Earnings per share from operations are slightly higher at $7.46, as compared with $7.28 for the year 1927. During the course of the year, the company's share capital was increased to 133,333 shares. The additional capital was payable in installments, so that the company only obtains the benefit of the full proceeds in its next fiscal year. Profit from sale of capital assets (Gaspe timber limits), however, provides a further $6.24 a share on the outstanding stock, but practically all of this has been transferred to the general reserve.

C. R. Whitehead, president, says in part: "During the year your company disposed of its Gaspe timber limits, and acquired another limit adjacent to your holdings on the Portneuf River, so that your company's timber areas now consist of 1,121 square miles in the St. Maurice district, 553 square miles on the Portneuf River, and a one-third interest in the Island of Anticosti."

New Dam for Gatineau Power

The Gatineau Power Company, a subsidiary of the International Paper Company, has begun construction of another storage dam on the Gatineau River in the Province of Quebec. Work will be carried on throughout the winter and it is expected that the dam will be completed and ready for operation next summer.

The new dam—storing the waters of Lake Cabonga—and the present Mercier storage dam will form reservoirs ranking with the large water-storage systems of the world. The two reservoirs

(*Continued on page 62*)

Pennsylvania Paper Mills Curtail Operations

Output of Manufacturing Industry Slowed Down Pending Resumption of Buying for New Year's Requirements and Passing of Inventory Time—Philadelphia Paper Market Exhibits Quieter Trend With End of Christmas Shopping Rush

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., December 24, 1928.—While a few dealers were kept busy with small lot demands for specialties needed for the holidays the majority drifted into a narrower market. The last minute buying of Christmas specialties was considerably in advance of last year as consumers continued to hold off purchases pending stocking on a larger scale when the volume of trading demands. There is greater competition than has ever dominated the paper market within recent years. This keen competition is particularly stressed between the mills who are looking for tonnage orders to keep plants operating after the new year. Kraft mills of the north and south are most active in this bidding for orders wherever there is prospect of obtaining volume business and are making attractive offers to local dealers to induce advance purchases. The Pacific Coast kraft manufacturers have withdrawn almost entirely from the local market as prices have been advanced from the levels at which they were offered in early summer when these mills were competing with northern and southern mills for orders in the Philadelphia trade. Higher shipping rates and production costs have practically left the field to the north and south kraft makers in so far as local business in concerned. Belated demands for Christmas specialties in social announcements, papeteries, greeting cards and fancy wrapping papers have kept dealers handling the grades at rushing speed meeting small lot orders that have been required within the week. Converting departments have been worked overtime on these commodities. There has been a livelier market for writing papers, bookkeeping supplies and inventory requirements.

The Pennsylvania paper mills are slowing down operations pending the passing of inventory time and the resumption of buying for the new year. Most of the local manufacturing industry is working at 75 per cent of capacity. A few substantial orders have been garnered among the fine paper producers, and board mills have been fairly active with orders that were placed while the recent price cutting was under way. Many new mill lines have been added by Philadelphia paper dealers within the past few months and New Year price lists will show many innovations. Some mills have withdrawn from the distribution branch of the trade and their lines confined to single dealers who will control local distribution in the coming year.

A. Hartung & Co. Inc. Expands

Owing to increased business which has developed within the past few months since acquiring the distribution of the Curtis papers, the fine paper house of A. Hartung & Co., Inc., has acquired larger warehousing facilities at 5th and Cherry streets. The fifth floor of the Horstmann Building has been leased for the new warehouse addition and here will be stocked the complete line of the Curtis Brothers Mills, of Newark, Del., which the firm took over with the retirement from the distributive field of the manufacturers. The Hartung company has sole distribution representation in the Philadelphia territory. The firm will continue to occupy the sales and executive offices in its own building at 506 Race street, where it has been established for many years. The new warehouse will be ready for occupancy with the new year.

Lindsay Paper Co. To List New Mills

With the new year, the Lindsay Paper Company, 804 Sansom street, will issue its new list of mill representations and the prices of the various papers which are manufactured by the concerns for which the firm is Philadelphia distributor. The new price list, which will be ready January 1, will show a wide range of mills that have been added within recent months and an entirely new line up acquired within the two years that the company has been reorganized. Two years ago, the Lindsay Paper Company, then known as Lindsay Brothers, represented chiefly the Westvaco Line made by the West Virginia Pulp and Paper Company. Shortly after the manufacturers opened their own local branch offices the Lindsay Brothers reorganized and took over an entirely new line of mills. These have been extensively augmented within the Fall months and the new list will show a large assortment of manufacturers of well known brands of fine papers that are now represented by the firm. The new mill list and price catalogue will be compiled by Carl Magathalin, formerly sales manager for the Reading Paper Mills and other local manufacturers, who is now affiliated with the Lindsay company.

Schwartz & Co. To Occupy Larger Home

Larger sales and warehousing facilities have been leased by the wrapping paper house of Schwartz & Co., 3 Bank street, who have also a specialized business devoted to coarse grades, bags and twines, and corrugated products. The firm has acquired the five story structure at 151 North 3rd street, where will be stored large quantities of specialties which have been developed in the distribution business. These are tissues and krafts, which are to be stocked in car load volume with the occupation of the new home. The new quarters provide for 16,000 square feet of warehousing space. The firm will celebrate its 10th anniversary of business by removing to the new home on March 1, 1929, just a decade from the date of its entrance into the paper trade in this city, with Samuel Schwartz at its helm. The sales force has been extended to a specialist in die wiping papers, Howard R. Miller, who formerly was connected with E. Latimer, Jr., having taken over that line as a member of the staff.

Synthane Plant Nears Completion

As the plant of the recently incorporated Synthane Corporation nears completion announcement is made of the plans of the new concern to begin operation in the early spring months. The Synthane Corporation was incorporated under the laws of Delaware last September and shortly after started building operations on a plant at Oaks, Pa., near Philadelphia, where will be manufactured laminated products when construction work is completed. The members of the corporation are all well known and experienced fiber products manufacturers long identified with the trade. They are President R. R. Titus, formerly vice president and general manager of the Diamond State Fibre Company, of Bridgeport, near Norristown, Pa., and its subsidiary, the Celeron Company, whose plant is located at Bridgeport; Vice President J. B. Rittenhouse, and Secretary and Treasurer George J. Lincoln. The new concern will produce laminated materials used by radio manufacturers, automobile manufacturers, electrical concerns and other industries which are heavy consumers of similar products produced by the Celeron Company.

Garrett Buchanan Co. In Yuletide Festivities

Christmas carols are to be part of the Yuletide festivities which the Garrett-Buchanan Company will hold today at headquarters, sponsored by the Welfare Association of the company. There will be given a program of musical selections of Olde Time Christmas Carols, sung by the professional Hotz Quartet and choral singing by the staff. One hour will be set aside for enjoyment of the Yuletide festivities and social session of the Welfare Association.

Thomas W. Price Co. in Christmas Eve Party

Christmas Eve will be devoted to the usual celebration staged by the Vici Association, the social organization of the Thomas W.

Price Company, at its headquarters, 503 Ludlow street. There will be a large Christmas tree erected on the 4th floor and beneath its branches a luncheon will be served while the remainder of the afternoon will be devoted to a program of musical selections and singing, to wind up with a dance in the late evening. The arrangements were made by the chairman of the entertainment committee of the Vici Association, William Simmons.

Grellet Collins Returns from South America

Following a month's tour of South America, President Grellet Collins, of the Dill and Collins Paper Company, fine paper manufacturers, Richmond and Tioga streets, returned to New York late last week. He made a friendly call on the representatives of the Dill and Collins Company in the Latin countries. He will return to his desk at the mills today.

Temple Paper Co. Offers Sanitary Products

An attractive and popularly priced assortment of high grade sanitary products is being produced by the Temple Paper Company, 425 North 40th street, the line of napkins, towels and roll papers having been introduced to the distributors with the return to activities of Daniel J. Troy, head of the firm, who recently has been confined to his home with illness. The lines are of the well known grades that Mr. Troy has been producing for many years as one of the best of converted Quaker City products of this character and a wider range of offerings are included with the renewal of production on a broader scale.

Second Unit at Port Townsend Nearly Ready

PORT TOWNSEND, Wash., December 21, 1928.—The second unit of the new National Paper Products company kraft pulp and board mill is nearing completion, and probably will start operation early in 1929. It is stated that the entire production of this second unit has been contracted for by the Bates Valve Bag corporation. The first unit of the Port Townsend development was completed last summer, and the entire production has been sold under a 20-year contract to Fibre Board Products, Inc. These two units represent an investment of more than $6,000,000.

In connection with the report of the new plants at Port Townsend, it is also stated that net earnings of the Grays Harbor Pulp and Paper company, another of the Zellerbach interests, are expected to be increased at least $350,000 a year when operations are started in a paper mill under construction adjoining its plant at Hoquiam, Wash. As recently announced, a $1,250,000 bond issue is expected to be placed on the market soon to assist in financing the new paper mill.

223-Inch Camachine 20 Just Started at Madawaska

Placed at the end of one of Pusey & Jones' machines making light weight catalogue, book and waxing sheets at the new mill of Fraser Paper Ltd. at Madawaska, Maine, is one of the new Camachine 20's for handling light weight papers.

This big fellow, with a drum face width of 223 inches can attain a speed of 3000 feet a minute, winding rolls up to 36 inches diameter.

This is the fifth of a series of Cameron slitters and winders which Fraser Paper Ltd. have put into use at their Madawaska Mills. The first two are Type 18's operating on sulphite bond machines of 157 inch width, the third is a Type 19 winding a 177 inch web of bond, the fourth, also a 19, operating on a machine producing bond of 186 inch width, and the fifth, which has been described above, completes the battery of five powerful and speedy winders for high class roll production.

A. E. Garrison To Be Superintendent

THOMPSON, N. Y., December 24, 1928.—Arthur E. Garrison, of Toronto, Can., has accepted the position as superintendent of the plant of the United Paperboard Company here. Mr. Garrison and family have already located here occupying the house vacated by Robert F. Engelhardt, former superintendent of the plant.

Continental Opens New Office at Rumford

RUMFORD, Me., December 24, 1928.—Centralization of the offices of the Continental Paper and Bag Corporation went into effect, Monday, December 17, a reception and entertainment for department heads, foremen and the office force being held on the Saturday night preceding at the new office where 150 employees, including New York corporation officials, were present.

A. G. Stone, general manager of the Rumford mill, was chairman of the speaking program, during which it was stated that in the vicinity of $400,000 has been and is now in the process of being expended on improvements for the plant.

Mr. Stone, in opening the speaking program, stated that the purposes of the get-together were threefold, namely: to mark the opening of the offices; to bring the members of the various offices and departments together; and to meet the New York officials.

Proceeding with the program, Mr. Stone expressed gratitude to H. A. Sheesley, vice-president and general manager of the corporation, for confidence placed in the Rumford plant as shown by the large outlay of money for improvements.

In his brief talk, Mr. Sheesley voiced confidence in the Rumford plant, paid tribute to the employees, and stated that he believed that this local mill would be one of the largest and best of its kind in the country.

Paul Koenig, manager of manufactures, of New York, and P. J. Sullivan, manager of accounts, of New York, gave short talks to the gathering.

Other speakers included S. H. Garrigan, superintendent of the paper division, C. L. Brown, superintendent of the bag factory, A. F. Hinds, agent, Hugo Hinnenthal, assistant general manager. Mrs. H. A. Sheesley was also introduced to the gathering.

The new offices were designed by S. L. Foster, to whom great credit was given by Mr. Stone in the course of his remarks, and E. L. McManus and Hector A. Roderick, in charge of arrangements for the entertainment, were also lauded by Mr. Stone and the gathering.

Track Facilities for Taggart Bag Factory

[FROM OUR REGULAR CORRESPONDENT]

OSWEGO, N. Y., December 22, 1928.—Officials of the Ontario division of the New York Central Railroad Corporation conferred with Joseph E. Quinlan, traffic manager of the St. Regis Paper Company, during the past week relative to additional track facilities at the Taggart bag factory in this city. General Superintendent Frank E. McCormick and Superintendent Charles E. Olp represented the railroad company in the conference. It is planned to run another set of tracks from Mitchell street to the lake shore, a distance of more than 1,000 feet to the new storage warehouse, which will enable better handling of pulp and other raw materials used by the paper company.

At this time the New York Central siding extends along the east side of the plant from the highway to the warehouse on the lake shore and switching delays have been frequent because it has been necessary to use the same track for loading bags and handling raw materials. With the new arrangement it was explained that it will be possible to handle all car loadings and unloadings at the same time which will prove of benefit in prompt service. Work on the new track will be started early in the spring.

Tariff Decision Reversed

WASHINGTON, D. C., December 17, 1928.—The United States Court of Customs Appeals has reversed the decision of the lower court in the case of the United States against A. H. Ringk & Co. in which the court held that certain telephone note books were dutiable at 35 per cent as manufactures of paper, under the present tariff law, as claimed by the United States and not dutiable at 25 per cent, as printed matter having a domestic author, under another paragraph of the present tariff law, as claimed by the importer.

Wisconsin Mills Close Down for Holidays

While Majority of Plants Resumed Operations Wednesday, Several Mills Are Remaining Down for Longer Periods in Order to Make Necessary Repairs—International Preferred Stock Offered to Workers of Marinette & Menominee Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., December 24, 1928.—The holiday season has brought the usual quiet condition in the paper industry of Wisconsin. The majority of the mills closed down Saturday evening for the Christmas period and were not planning to resume until Wednesday. Some are to remain down for a longer period in order to make repairs. One of these is the Union Bag and Paper Company, of Kaukauna, Wis. This mill will not resume until January 1, because of repairs which are being made to a water wheel.

Revision of State Forestry Laws

Attention of paper mill owners will focus soon on the Wisconsin legislature, whose biennial session starts early in January. Further revision of the state forestry laws will be sought in the interests of conserving the pulpwood supply. The lawmakers started the state on its way with the most stupendous program in its history when the severance tax law was passed two years ago, and now other proposals are up to improve further on the situation.

One of these is a change in the laws so as to solve the problem of losses to counties because large areas in the cutover region have been taken over on account of delinquent taxes. Counties seek the right to enter these lands under the forest crop law without being obliged to pay the customary annual tax of ten cents an acre. The present law requiring six years to prove title on lands bought on tax certificates is also slated for a change so as to shorten the time, thus making purchase of delinquent lands more attractive to private interests. These matters were the principal subjects of discussion at a conference last week at Rhinelander, Wis., of timber owners and others from a group of northern Wisconsin counties.

Buying up of lands by the United States Government for three large forest preserves in northern Wisconsin is expected to start soon. Farmers who are attempting to till the soil in isolated spots in the forest region will be induced to move into communities set aside for agriculture so the federal tracts will be solid. Farmers in other sections will be encouraged to raise farm woodlands. Attention is also being given the conservation of young trees by finding a substitute for them when used as car stakes for log shipments. It is reported that there is a big timber waste from this source, and that a remedy is available through patented steel stakes. Walter J. Kohler, governor-elect of Wisconsin, has pledged himself to support conservation legislation after he takes office on January 1.

Green Bay Largest Tissue Producing Center

With a production of 60,000 tons of paper towels, toilet paper and paper napkins annually, Green Bay, Wis., now claims to be the largest tissue producing center in the world. These figures were used recently in a brief on freight rate cases. There is invested in paper mills at Green Bay $13,700,000. Competition in the middle west is very light on these products but most of it comes from cities in New York and from other points in the East. Green Bay is fighting for more equitable freight rates to the Southwest, and also for a grouping of rates with Milwaukee, Wis.

News of the Industry

Workers of the Marinette and Menominee Paper Company, of Marinette, Wis., are being urged to purchase preferred stock of the International Paper and Power Company, now that this corporation has acquired the stock of the Continental Paper and Bag Corporation, of which the Marinette company is a part. The stock is being sold at $94 a share, with annual interest at seven per cent. In addition each employee who remains with the company during the next five years will receive a bonus of $1 a share for the first year, increasing $1 each year up to $5.

Installation of a coal conveyor has been completed at the Stevens Point, Wis., mill of the Consolidated Water Power and Paper Company. The coal will be delivered direct from freight cars to the coal storage. The time of unloading a car will be reduced from the twenty hours required by one man to two hours.

Equipment is being installed in the new finishing room and bleach plant of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis. The company is looking forward to an early change of production as a result, so that higher grades of paper can be turned out instead of news print. Two machines will be changed over.

The Consolidated Water Power and Paper Company's mill at Biron, Wis., has the best safety record thus far of the entire group owned by the company. Operation has been conducted for four months without a lost time accident. The mill at Port Arthur, Ont., is second, with only one lost time injury.

More than three hundred attended the closing banquet of the fall safety school conducted at Wausau, Wis., with large support from the paper mills. Certificates were presented to all who had a good record of attendance. The principal speaker was Captain P. Dinsmore Upton, of New York, who in a humorous vein brought home some of the principles of safety success.

Stream pollution will be given consideration by the Chamber of Commerce, of Appleton, Wis., at a forum banquet on January 14. One of the principal speakers will be C. M. Baker, engineer for the American Paper and Pulp Association, and formerly state sanitary engineer. He has made a widespread study of conditions and has been instrumental in gaining cooperation between the manufacturers and the Wisconsin Board of Health to solve this problem. L. F. Warrick, state sanitary engineer, will also be on the program. Motion pictures will be used in connection with the addresses.

Workmen have completed razing of the smoke stack at the Bergstrom Paper Company, Neenah, Wis., which was discarded when the new boiler room and power plant recently were put into operation. The stack is 150 feet high and of reinforced concrete. Air hammers were used in the wrecking.

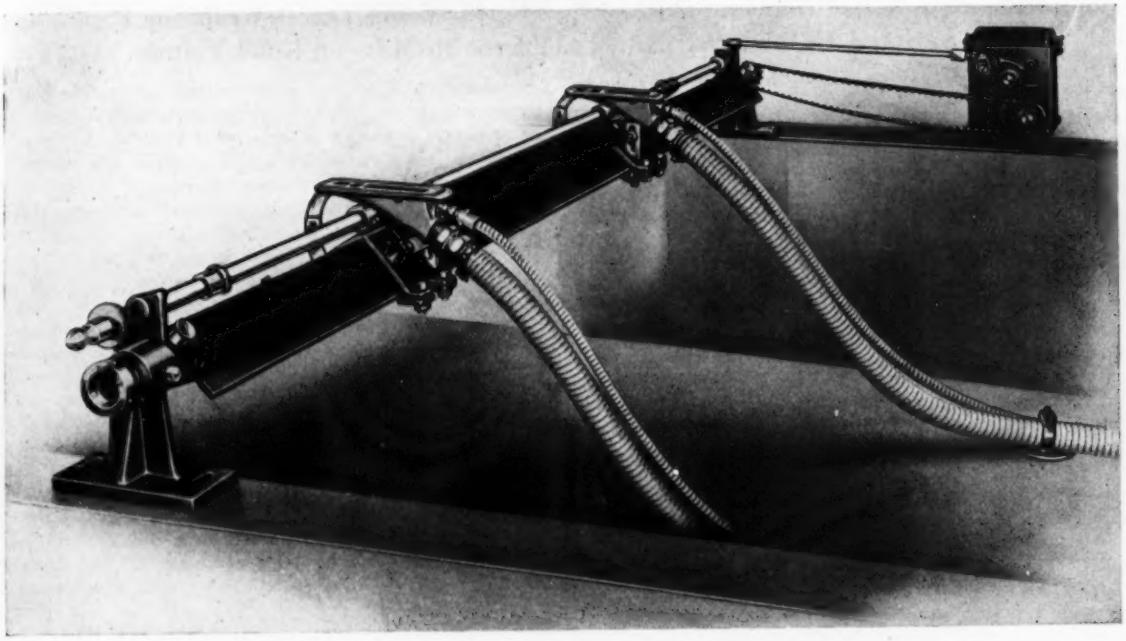
Russell Mann has resigned as general superintendent of the Peshtigo Paper Company, Peshtigo, Wis., and has accepted an executive position with the Cherry River Paper Company, Cherry River, West Virginia. The Peshtigo mills are to be sold at auction in January, after which the concern will become the E. A. Meyer Paper Company.

Employees of the Marinette and Menominee Paper Company, of Marinette, Wis., helped to spread Christmas cheer by erecting large Christmas trees on top of the mill roof and the mill water tower. The trees were lighted at night.

D. D. Madden Returns to Portland

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., December 21, 1928—D. D. Madden, president of the Pacific Northwest Paper Mills, Inc., has returned from an extended Eastern trip to his home here. Business of his company, Mr. Madden states, is jumping ahead rapidly. The company is just now making a colored wrapping paper to individualize concerns using it. The idea is taking well, since the style now in everything is tending toward color. Incidentally Mr. Madden enjoyed a ring-side seat at the Yale-Harvard game, a feature of his trip not to be overlooked.



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Demand for Paper Is Seasonal in Chicago

Conditions in Local News Print Market Show Signs of Improvement—Fine Paper Industry in Sound Position With Promising Outlook for Forthcoming Year—Wrapping Paper, Tissues, and Holiday Specialties Continue to Move in Good Volume

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., December 24, 1928.—The week before Christmas brought the last big splurge of retail business before January. Paper merchants have already supplied their retail markets with the bulk of the demand and are now only being asked to fill in on stocks that have been depleted or in rushing out orders for wrapping paper, tissue paper, and the most seasonal of the paper lines.

The news print interests in Chicago are looking forward to the New Year with the hope that it will bring favorable prices and a lessening of the strain that is reported to be still causing much conjecture and guessing in local news print circles. Conditions in this market, however, have improved. Mills are running at a fairly good pace. The fine paper market and the book and cover market now begin their swing back up the hill marked by the first of the year. The year 1928 is said to have brought some improvement in these grades with prices firm and the demand somewhat improved. Sales have increased for the most part because of unusual efforts put forth by paper houses. These efforts have included direct selling by experienced salesmen, advertising in publications and some excellent direct mail advertising that has been educational and valuable to the entire paper trade as well as to the consumer public.

Wrapping and tissue papers continue to hold the spotlight in this last week of holiday trade. The board market is on its regular and unalarming seasonal decline. Waste papers are in slightly improved circumstances.

F. C. Sullivan Addresses Paper Salesmen

Members of the Chicago division of the Salesmen's Association of the Paper Industry were given the privilege of hearing Frank C. Sullivan at their regular Monday meeting, December 17, at the Hamilton Club. A large number of salesmen were present to hear Mr. Sullivan, who is generally acknowledged to be one of the greatest experts on offset lithography. Mr. Sullivan discussed this subject at length to the group of salesmen present and the meeting has been characterized as one of the most well attended, interesting and profitable in the series of talks given so far.

H. R. Knott, president of the local association, has announced that though there will be no program of special interest at the January 7 meeting, a continuation of special talks by men well known in their respective fields will be scheduled for January 14, though the name of the first speaker has not yet been announced.

News of the Trade

The reader of Westvaco Inspirations for Printers, Number 40, published by the West Virginia Pulp and Paper Company, gets more than "inspirations." The issue is filled with interesting historical facts on the development of the printing industry in all its phases showing especially the effectiveness of advertising with the use of eighteenth century forms and illustrations. The issue Number 40 is called the "Eighteenth Century Edition" and in discussing this period and its relation to modern advertising the editors of the book include an interesting essay on Benjamin Franklin, talk a bit about "When America was Young," mention "Colonial America" and spend a page of the booklet in discussing William Blake and in giving an excellent treatise in his memory. The subject of Eighteenth Century Typography, historically interesting, rounds out the contents. These issues of Westvaco Inspirations for Printers seem to be improving all the time.

An interesting description of Warren's Photo Enamel, Warren's Olde Style-Antique Laid and Warren's Silkote Post Card, manufactured by the S. D. Warren Company, of Boston, is contained in the most recent attractive direct mail material sent out by that company. The use of conversation to put over the advertising message is prominent in the series of three pieces which advertise the grades of paper as well as calling attention to the Warren Standard Sales Units, with portfolio, that have been and still are so popular to printer and advertiser.

The Christmas number of the BookanWrap, house organ published by the Pilcher-Hamilton-Daily Company, Chicago, is decked out in regular holiday attire with its cover in red and green and a four color illustration to add to its attractiveness. Perhaps the most important item from the standpoint of contents is an article on the history of the BookanWrap. This publication has ended its fifth year as a medium of contact with customers, prospective customers, manufacturers and friends and it now has a mailing list of well over 9,000 interested readers. Whereas the average life of a house organ is said to be about nine months, the Pilcher-Hamilton-Daily Company is convinced that the growing success of its house organ is due to their viewpoint—a pre-conviction that there would not be a flood of orders resulting from the BookanWrap but rather a building of good will and closer contact that meant not direct business returns but something else of almost as much value. The Chicago wrapping paper house has not looked for a flood of orders and has therefore not been disappointed in its expected results.

Nekoosa-Edwards Nursery

Encouraged by its success in reforestation, the Nekoosa-Edwards Paper Company, of Port Edwards, Wis., is making plans to plant enough acreage so as to assure the entire supply of pulpwood for its kraft mill at Nekoosa, Wis. In addition to the plantings which have been made in the vicinity of Nekoosa, the company is planning to grow trees on all of its holdings in Ashland and Sawyer counties.

The nursery now has more than 1,800,000 baby trees, and the plantings will amount to 2,500 acres a year. The nursery stock will be increased by planting sufficient seed next spring to produce between 2,500,000 and 3,000,000 trees.

By improved methods, the cost of planting has been reduced from an average of $9.00 an acre to $2.69, including the cost of plowing. Planters can place an average of 2,200 trees in nine hours by the system now used.

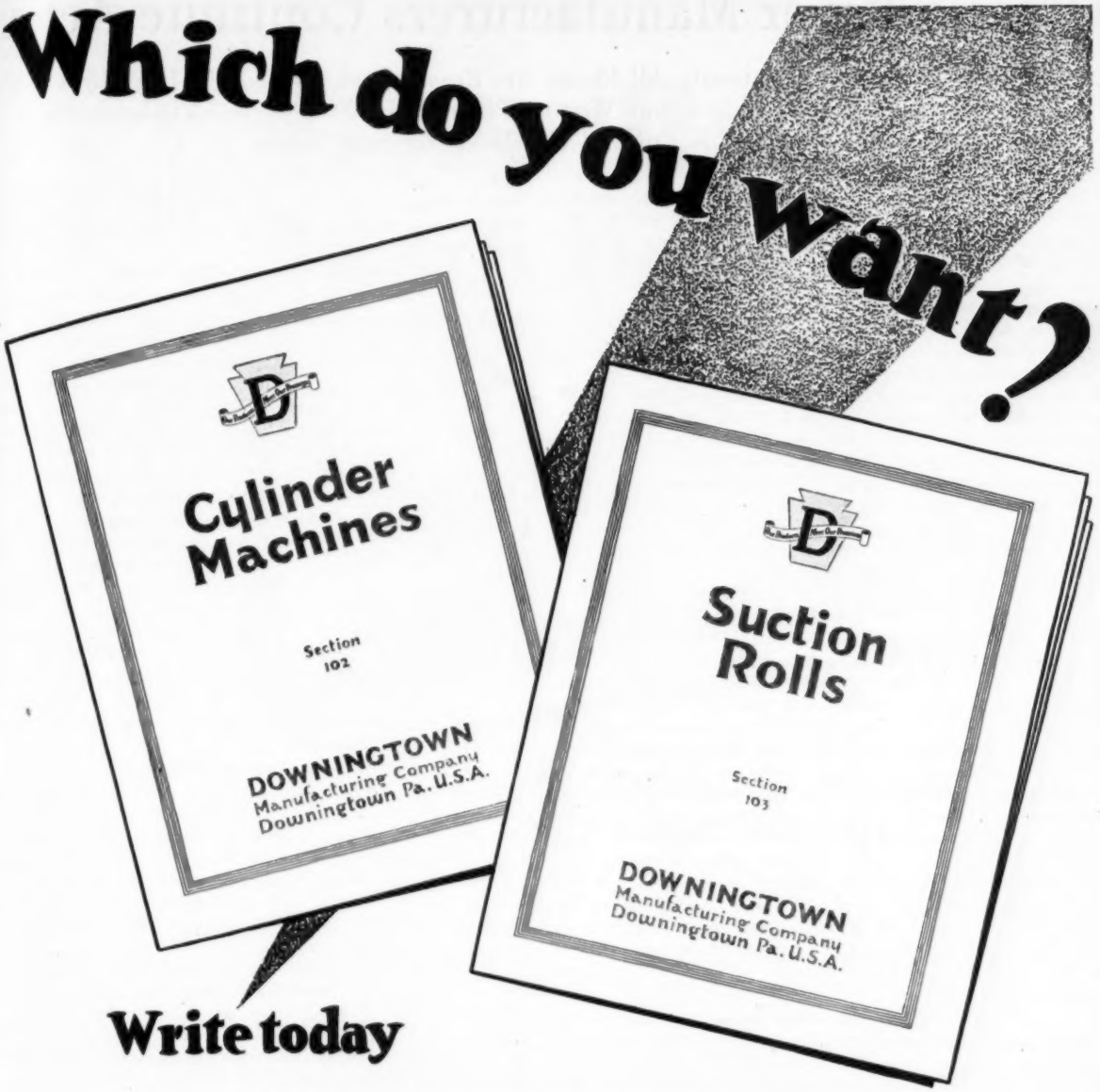
Announcement is made of the marriage of Stuart E. Thompson, of Neenah, Wis., and Miss Martha E. Porter, of Chicago. Mr. Thompson has been employed by the Menasha Products Company, and after January 1, will be associated with the Central Paper Company, of Menasha, Wis.

New Fort Edward Plant Nearly Completed

[FROM OUR REGULAR CORRESPONDENT]

FORT EDWARD, N. Y., December 22, 1928.—Construction work on the new plant of the Amalgamated Tablet Company is progressing rapidly with contractors in charge expecting to have the structure ready for occupancy by March 1. During the past week the Domil Construction Company received orders to suspend work but shortly after another order came to resume operations and a full crew of workmen is again being used in pushing the contract to completion. The Domil Construction Company is a subsidiary of the International Paper Company which is expected to furnish the raw material for the new concern. Winter weather is not expected to hamper the construction project to any great extent.

Which do you want?



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Ontario Paper Manufacturers Continue Active

Despite Holiday Season, Practically All Plants Are Busy—Book Paper Mills Have Orders Well Into New Year—Bond, Ledger and Writing Plants Fully Employed—Wholesale Paper Trade Has Enjoyed Excellent Autumn Season

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., December 24, 1928.—The feature in the Canadian paper manufacturing industry during the past week was the drop in the price of chip board, that product now selling at $47.50 as against the $52.50 figure which has prevailed for some little time past. Unsatisfactory conditions in the paper and board market across the line have been having their reaction on the board market of late and it was felt by the manufacturers that a reduction in price was necessary if United States board was to be kept out. The understanding is that the new rate will remain in force till the end of January, when the price will again come under advisement by the board makers. On April 13 this year the manufacturers advanced the price of chip board from $50 to $55 a ton, which permitted offerings of board from the United States in competition with the domestic product. There was a later decrease to $52.50, and now, with American board coming in, the mills have found it necessary to make a still further reduction in order to protect their interests. There have been some other slight price readjustments but the material drop applies to chip board only.

Prices of other paper commodities continue firm and there has been no reaction felt in the Canadian paper market from the situation in the United States. Practically all the mills are busy and, from a manufacturing standpoint at least, there was no cessation of activity due to the holiday season. The book mills are particularly busy and have orders ahead well into the New Year. Bond, ledger and writing manufacturers are also well employed and there is a well-sustained demand for those products. There has been some lessening in activity by the coarse paper mills, although the fall produced some very good business for both the wrapping and bag mills. The wholesale paper trade has had a very active fall season and business did not slacken to any great extent until a few days before Christmas. Many houses report a substantial increase in turnover this year as compared with last year's record. The paper converting trade and manufacturing stationers have had a good fall season and their year will average up well. The paper box industry is one of the most prosperous of the paper groups and every department reports much larger turnover than last year.

Box Makers Have New Secretary

S. J. Frame, who for the past fourteen years has been secretary of the Canadian Paper Box Manufacturers' Association, and the Toronto Carton Council, has resigned his position with that organization, following the decision of the association to employ a full-time secretary. R. S. Dunlop, president of the central paper box body, officially announced the change a few days ago and added that the association felt that the industry in Canada had reached a stage where its various outlying branches, as well as those in the larger centers, would be better served by the employment of a secretary who would devote all his time to educational, organization and cost work in the interests of the members. The association has secured the services of C. B. Hodder, formerly with the Dominion Government Taxation Department, who will open an office in the Commerce and Transportation Building, Bay street, Toronto, on January 1.

Commercial Papers, Ltd., To Build

Commercial Papers, Ltd., a subsidiary of Litho Print, Ltd., King street West, Toronto, have purchased a site on King street East, near Berkely street, and the buildings thereon will immediately be wrecked preparatory to the building of a large new factory for the manufacture exclusively of safety papers used for checks and other bank documents. The company have been in operation a year in the east end of the city and when the new factory is completed the new plant will be moved in. Litho Print, Ltd., are also preparing plans for a new building for their operations on Duke street.

Well-known Pulp Man Passes

Manley Chew, ex-M.P. for East Simcoe, whose home was at Midland, Ont., passed away at Preston Springs, Ont., a few days ago, following a protracted illness. Deceased was widely known in pulpwood and lumber circles throughout Canada. In the political field he had a unique position in that both he and his father, the late George Chew, contested East Simcoe for the House of Commons against the same opponent, the late Senator William H. Bennett, within an interval of eight years. The late Mr. Chew was born at Rugby, Ont., in 1874, and was connected with various companies in the lumbering and pulpwood industries.

International May Locate at Nipigon

It is stated at Port Arthur, Ont., that the International Paper Company has purchased a block of land at Nipigon from John McKirdy, the property known as Block Nine, the price being $10,000. The purpose of the purchase is not known in Port Arthur and district, but the view is expressed in some quarters that it points to the establishment of the $10,000,000 pulp and paper mill at Nipigon rather than at Port Arthur or Fort William, both of which cities hope to get the plum. It is said that the company will save $60,000 annually in transportation of wood through locating at Nipigon.

Dryden Is Out of Receivership

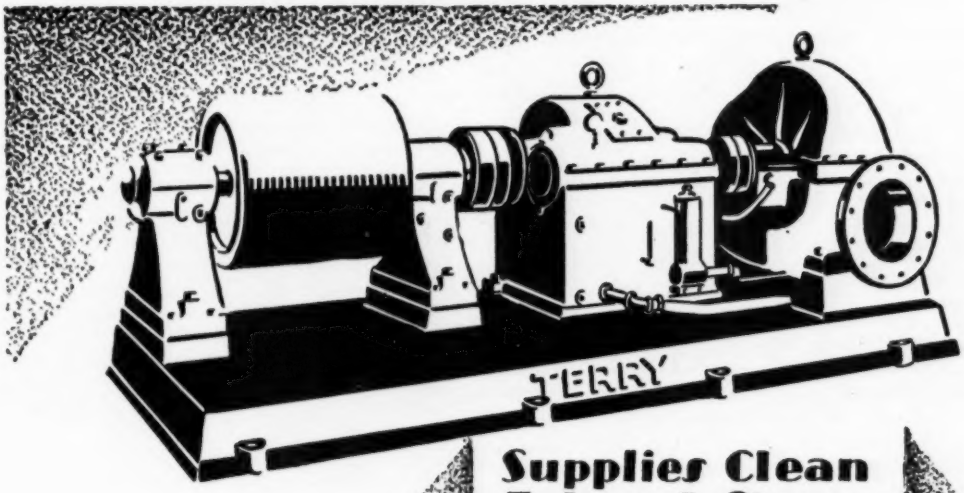
Official announcement has been made that the Dryden Paper Company, Dryden, Ont., had been taken out of the hands of the receivers, under whom the company has been operated since October, 1923. It is further stated that J. H. A. Acer has been appointed president of the company in succession to W. A. Black, who has held the office since the incorporation of the present company. While the complete directorate has not been announced, it is understood that Mr. Acer will have associated with him George H. Cahoon, Jr., and F. A. Sabbaton, the latter having been one of the receivers. Since the company was placed in receivership a little over five years ago, it has gradually developed an earning power that has wiped out all indebtedness and in addition established a fair surplus, while present business of the company is reported as quite promising, both in kraft and sulphate pulp. A further announcement is expected shortly dealing with a capital reorganization and new financing which is required to cover the cost of additional power that has been developed and for increasing capacity. The company in recent months entered into a contract with the Bates Valve Bag Company for a five-year period for the supply of kraft paper for the manufacture of paper bags. This contract, it is understood, will absorb about three-quarters of the entire output of Dryden kraft.

Notes and Jottings of the Trade

W. P. Bennett, widely known in the Canadian paper box trade through his long connection with the Rudd Paper Box Company, Toronto, and who is now handling lines connected with the carton trade, has taken on the exclusive Canadian agency for Canada of the coated paper lines of A. M. Peebles & Son (1927), Ltd., paper makers and wholesale stationers, London, England. Mr. Bennett's office is in the Commonwealth Building, King street East, Toronto.

James Logie, Ontario representative of the Canada Paperboard Company, has moved into larger office quarters in the front of the Foy Building on Front street, Toronto.

The Terry Paper Machine Drive



Supplies Clean Exhaust Steam For Drying

You can secure clean exhaust steam for drying by employing the exhaust from a Terry Paper Machine Drive. In this drive there is absolutely no oil in the exhaust steam. The steam leaving the turbine is just as clean and suitable for drying as steam taken directly from the boilers. Why? Because the Terry Drive requires no internal lubrication.

This is another of the many advantages that paper mills secure thru the application of a Terry Drive. A Terry engineer will be glad to explain to you the simple, dependable lubricating system of the Terry Paper Machine Drive, or any other points connected with its design and application.

The Terry Steam Turbine Company

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OFFICES IN PRINCIPAL CITIES
Steam Turbines + Gears + Shaft Couplings

T-1029

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Chicago, Ill.—The Lanzit Corrugated Box Company, 2509 West 22nd street, is having plans completed for extensions and improvements in plant, with installation of additional equipment for increased capacity, entire project to cost close to $200,000. A. Epstein, 2001 West Pershing Road, is architect and engineer; bids will soon be asked on general contract from last noted office.

St. Louis, Mo.—The Federal Paper Stock Company, 4812 McKissock avenue, has concluded negotiations for the purchase of property and assets of the Vogler-Stewart Company, 806 North Main street, paper products, and will consolidate with its organization. An expansion program will be carried out in connection with the merger.

Philadelphia, Pa.—The Keystone Mulch Paper Company, recently organized by William E. Boryer, Gladwyn, Pa., and associates, with capital of 1000 shares of stock, is said to be planning early operation of a new mill in this vicinity for mulching papers and kindred products. Harry A. Jacobs, Narberth, Pa., is interested in the new organization.

Philadelphia, Pa.—The United States Gypsum Company, 300 West Adams street, Chicago, Ill., which has recently been projecting plans for a paper mill in connection with proposed new plant at Philadelphia for gypsum board products, has filed plans for initial buildings at 58th street and the Schuylkill River, to cost more than $500,000. It is said that the paper mill unit will follow after completion of these structures. The Morton G. Tuttle Company, Park Square Building, Boston, Mass., is architect and contractor.

Spotswood, N. J.—The American Salpa Corporation, 40 East 34th street, New York, is awarding contracts for equipment for its proposed mill at East Spotswood, N. J., for manufacture of material resembling paper and used for like service, and will place other orders at an early date. An award for a motor generator set has been given to the General Electric Company, Schenectady, N. Y. The plant will consist of a group of eleven buildings, according to present plans, to cost in excess of $500,000, with machinery. Contract for erection was recently let to the Turner Construction Company, Graybar Building, New York. Clark McMullen & Riley, 101 Park avenue, New York, are engineers.

Boston, Mass.—Carter, Rice & Co., 246 Devonshire street, paper products, have concluded arrangements for acquisition of property and assets of the Charles A. Esty Paper Company, 288 Congress street, and consolidation will be carried out under the first noted name. Merged company plans general expansion program. Branches will be maintained in future as heretofore at New York, San Francisco, Seattle, Wash., and Portland, Ore.

Marion, N. C.—The Marion Chamber of Commerce is at the head of a project to construct and operate a local plant for the manufacture of paper boxes and containers, and information is being asked by L. Earl Browder, secretary, regarding suitable machinery and equipment for proposed factory. Estimates of cost will soon be made.

St. Louis, Mo.—The Emery-Carpenter Container Company, Long street, Cincinnati, Ohio, manufacturer of fibre containers, etc., will proceed with installation of its proposed new branch plant in building at Clark avenue and Second street, St. Louis, recently leased, and will provide for large output of fibre drums and kindred products. The new factory is expected to cost in excess of $40,000.

Washington, D. C.—The Senate Committee on Manufactures is said to be considering a bill presented by Senator Thomas D. Schall, Minnesota, for an appropriation of $1,000,000, for the construction of a new paper mill by the Government, on site to be selected in Kansas, with facilities for the manufacture of pulp from wheat straw and corn stalks, under a process recently developed by the Bureau of Standards, in a series of tests conducted by W. E. Emery, chemist. It is held that wheat straw would be obtained at a price of $15 per acre, and corn stalks, $12 an acre.

Woonsocket, R. I.—The American Paper Tube Company, Hazel street, has awarded a general contract to J. F. Fleurant & Sons, Inc., 18 Oak Hill avenue, for erection of its proposed new addition to process division, to be one-story, estimated to cost about $45,000 with equipment. Work on superstructure will be placed under way at once. W. F. Fontaine, 16 Norwich street, Woonsocket, is architect.

Port Townsend, Wash.—The National Paper Products Company, an interest of the Crown-Zellerbach organization, San Francisco, Cal., is pushing construction on its second mill unit for production of kraft pulp and paper, and purposes to have the plant ready for service early in the coming year. The entire output is said to be contracted for by the Bates Valve Bag Corporation, Chicago, Ill. The first unit, placed in operation about six months ago, is running on a full capacity basis, with production being utilized by the Fibre Board Products, Inc., Antioch, Cal., an affiliated organization. The entire project will represent an investment of close to $6,000,000.

Greenville, S. C.—The International Paper Company, 100 East 42nd street, New York, is reported to be concluding selection of a site for its proposed new kraft pulp and paper mill in the eastern part of South Carolina, and proposes to place plans under way at an early date. The project is expected to involve in excess of $1,000,000.

Bloomsbury, N. J.—The Warren Manufacturing Company has work under way on a new one-story addition to its local paper mill, for which a general contract recently was let to the Austin Company, 16112 Euclid Avenue, Cleveland, Ohio, and purposes to have the unit ready for service early in the coming year. It is reported to cost in excess of $70,000, with equipment. The company has been carrying out an expansion program for a number of months past.

Cleveland, Ohio—Fire, December 18, damaged a portion of the storage and distributing building of J. Weiskopf & Son, 1575 Merwin avenue, N.W., paper goods. An official estimate of loss has not been announced. The damage will be replaced.

Cornwall, Ont.—The Canadian Cellulose Company, Ltd., an interest of the Howard Smith Paper Mills, Ltd., is said to be planning extensions in its mill during the coming year, to increase the capacity from 50 to 75 tons of bleached soda pulp per day. The mill is now running on a capacity schedule, the entire output being used at the local paper mill of the parent organization. This plant, likewise, is operating at maximum, under an annual schedule of

Jeffrey Hercules Chain Conveyor handling pulpwood

Jeffrey No. 111 Hercules Chain

The Original Combination Type Chain

THE Jeffrey Hercules Chain is the most popular chain in the pulp and paper industry for use on bucket elevators and chain conveyors handling pulpwood. It is also used extensively as a drive chain.

There's a Jeffrey Chain for Every Service

The following features are some of the reasons for the popularity of Jeffrey Hercules Combination Type Chain (originated by the Jeffrey Manufacturing Company)—

1—The heavy steel side bars alternating with the tough malleable center links combine to make a chain that will withstand unusually hard service.

2—D-Shank Pin Construction prevents movement of pin in side bar.

3—The metal of the solid link is distributed to provide a large pin bearing and ample outside wearing surface.

Every piece of chain is rigidly tested for strength and pitch and is guaranteed to fit sprockets of correct design.

The Jeffrey Manufacturing Company

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New York	Philadelphia	Cleveland	Milwaukee	Charleston, W. Va.
Buffalo	Pittsburgh	Cincinnati	St. Louis	Atlanta
Utica	Scranton, Pa.	Chicago	Denver	Birmingham
Rochester, N. Y.	Boston	Detroit	Salt Lake City	Houston
				Montreal

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Crushers—Pulverizers
Sand and Gravel Handling, Washing and Screening Equipment
Locomotives
Coal Mine Equipment
Tipple Equipment
Ventilation Fans

about 38,500 tons, and will hold to this basis for an indefinite period. C. Howard Smith is president.

Toronto, Ont.—The Canada Pad and Paper Company, Simcoe street, Toronto, is said to be arranging immediate call for bids on general contract for a proposed new addition to its mill on Madison avenue, consisting of a four-story unit, 100 x105 ft., to cost close to $200,000, with machinery, instead of a smaller sum previously noted in these columns. N. A. Armstrong & Company, 7 King street, East, Toronto, are architects, in charge.

Atlanta, Ga.—The American Paper Stock Company, Inc., 224 Grant street, S. E., is planning rebuilding of portion of factory destroyed by fire, December 4, with loss reported at $16,000, including equipment. Reconstruction will cost approximately a like sum.

Edmonton, Alta.—The Clarke Brothers Paper Company is planning for early re-establishment of its plant, following recent fire loss which destroyed the building occupied in part by the Clarke company and a number of other companies with total loss reported at $75,000.

Toronto, Ont.—The Corrugated Paper Box Company, Ltd., 189 Geary avenue, has awarded a contract for excavation work, including foundations, for its proposed new plant at Leaside, Ont., to John Gunn & Sons, Winnipeg, Man. The new plant will be one-story and basement, 180x700 feet, and is reported to cost more than $500,000, with equipment. A list of machinery to be installed will soon be arranged and it is understood that orders for equipment will be placed at an early date, to be handled through the office of C. C. Treloar, 11 Leader Lane, Toronto, engineer for the project.

New Companies, Etc.

New York, N. Y.—The Sunrise Paper Company has been incorporated with a capital of $10,000, to manufacture and deal in paper products. The company will be represented by H. Goldberg, 342 Madison avenue, attorney.

Chicago, Ill.—The Western Paper Box Company has filed notice of company dissolution under state laws.

San Francisco, Cal.—The Crown-Zollerbach Corporation, operating paper mills in Oregon, Washington and other localities, is arranging for additional financing for general expansion, to include 3,000,000 shares of cumulative preference stock, and 7,500,000 shares of common stock, no par value.

New York, N. Y.—The Klinck Trading Corporation has been incorporated with capital of $40,000 to deal in paper pulp and kindred products. The company will be represented by K. C. Newman, 120 West 42nd street, New York.

New York, N. Y.—The Kronenberger Products Company, Inc., has been incorporated with a capital of $25,000, and 550 shares of stock, no par value, to manufacture paper boxes and other containers. The incorporators are B. Rothleder and E. Stern. The company is represented by Rose Rothenberg, 1540 Broadway, attorney.

Akron, Ohio—The W. D. Turner Wall Paper Company has been incorporated with a capital of 250 shares of stock, no par value, to manufacture and deal in wall papers. The incorporators are William D. Turner and K. A. Meisner, both of Akron.

Rochester, N. Y.—The Commercial Paper Box Company has filed notice of company dissolution under state laws.

Longview, Wash.—The Longview Fibre Company has filed notice of increase in capital from $3,000,000 to $5,000,000, and from 60,000 to 100,000 shares of common stock, no par value.

Random Lake, Wis.—The Carton Makers, Inc., has been incorporated with a capital of $50,000, to operate a local plant for the manufacture of paper boxes and cartons. The incorporators are William G. and Walter W. Pipenhagen, and Emith C. Thiel, all of Random Lake.

Chicago, Ill.—E. H. Vavra & Co., 549 West Washington Boulevard, manufacturer of paper boxes and containers, has filed notice of change of company name to the Rock River Paper Company.

Wilmington, Del.—The Mutual Appliance and Wall Paper Company, care of the Corporation Trust Company of America, du Pont Building, Wilmington, has been incorporated with a capital of 600 shares of stock, no par value, to manufacture and deal in wall papers, and kindred products.

Chicago, Ill.—The Associated Paper Company, 1529 North Halsted street, has filed notice of increase in capital from $19,000 to $40,000, for general expansion.

M. G. Benson Goes to Kingsport

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, December 17, 1928.—Marvin G. Benson, who for the past thirteen years has been associated with the Mead Paper Company's interests, and for several years president and general manager of the Peerless Paper Company, of this city, a division of the Mead company, has been transferred to the Mead fiber plant at Kingsport, Tenn. Mr. Benson closed his desk Saturday and left at once for Kingsport. Recently there was a big consolidation of paper and pulp interests in which the Mead properties figured conspicuously.

It is understood that Plant Superintendent Cunningham will be in charge of the local mill operations.

Mr. Benson has won a secure place in the manufacturing world. His advance has been certain and has been based upon hard work and basic knowledge of the business.

Kingsport's gain is Dayton's loss for Mr. Benson is recognized as a business man of sterling worth and character and one who has been very helpful in civic, as well as industrial activities.

To Merge Subsidiary Power Concerns

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., December 17, 1928.—The Buffalo, Niagara and Eastern Power Corporation will apply to the Public Service Commission before the end of the year for permission to merge all its subsidiary companies into one operating organization. Preliminary discussion on methods of filing application for permission to merge were held during the past week between officials of the power corporation and representatives of the commission. Corporation officials said application may be made within a week.

Subsidiary companies to be united under the plan include Buffalo General Electric, Niagara Falls Power, Niagara, Lockport and Ontario Power, Tonawanda Power and a score of smaller operating units, some of which have already been absorbed into larger subsidiary organizations. While capitalization plans have not yet been announced it is understood that the merger calls for a name similar to the present holding corporation name.

Smith & Winchester's Historical Souvenir

The Smith & Winchester Manufacturing Company, of South Windham, Conn., has just issued a most interesting book covering the one hundred years history of its business as a manufacturer of pulp and paper mill machinery.

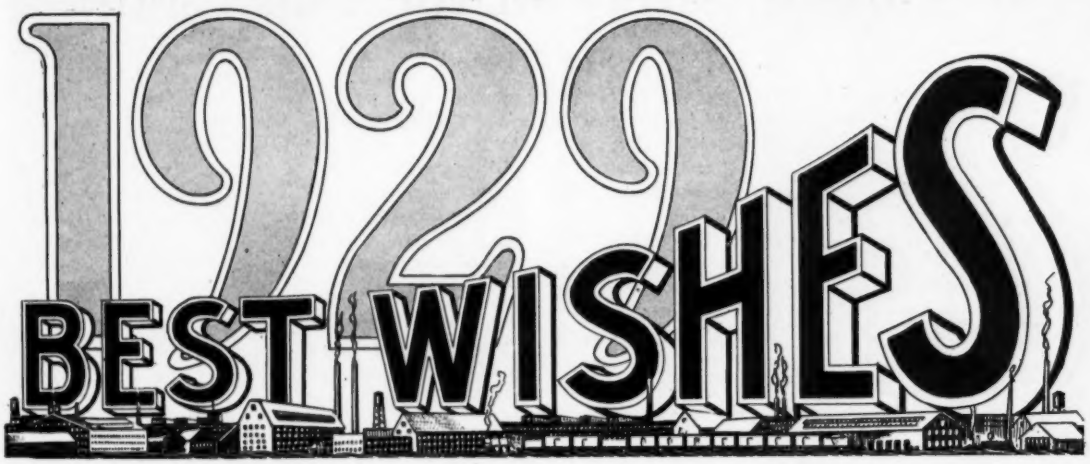
It beautifully illustrates the development of the Fourdrinier machine from the time when such machines cost but $2,000, up to the present period of the mammoth size machines.

It well emphasizes the tradition of the New England manufacturers for producing quality products, and is a book which will be well received by everyone indentified with our industries.

Dwyer Paper Products Builds

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., December 17, 1928.—The Dwyer Paper Products Company, located in the south section of Marion, Ind., now is building an addition to the plant 110 feet long and 36 feet wide. The addition will mean a considerable increase in the capacity of the plant. The company has been making a big variety of paper products and because of the growth in business, more manufacturing facilities were needed.



To the Pulp and Paper Industry—

and to our many friends who with us are privileged to be associated with it!

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HEATING—VENTILATING—DRYING

Organized Safety in the Paper Mill*

By W J. Peacock [1]

During my three terms in office, it has been possible to get things said by others in ways that afford pride enough in being sponsor. This year, however, the Council has asked me to make a report covering the activities of the section, and I accept that task eagerly in the hope of passing on to the section some of the valuable impressions that have come to me.

At the outset I want to bear my testimony that holding office in the section has been a schooling in organized safety methods which I might never have received otherwise. For every hour of service I have given the Paper and Pulp Section I have received a week's wages in group vision and national outlook. I never began to utilize the services of the Council to the fullest degree until I was called upon to extend those services to fellow-members, while the importance of my own job at home never appealed to me as strongly, taken alone, as it did after I began to see points in which my interests merge with the interests of 700 other plants.

I want to take time, then, to help the entire section to appreciate that profitable field in which the things that are "ours" enhance the importance of everything that may be called "mine." In somewhat the same respect that we are better men in proportion as we are worthy Americans, it can be said that a paper manufacturer is on the line to personal success in proportion as he participates in the vision and achievements of the industry as a whole. In three sessions to follow, you are to be handed the results of the work of others for the good of your own mills. This afternoon I ask you to think of yourselves as fellow-workers in a group which makes our individual efforts profitable.

Gathering Historical Data

One of the most useful tasks to me in connection with the chairmanship came the first month of my term in 1925. *The Annals* of The American Academy of Political and Social Science wrote asking for a chapter on "Safety in the Paper Industry."

The time limit given me was one month. Getting together historical data consumed most of the time. The article had to be written rapidly, mostly at night, with revisions by telegraph. Looking back now, I regret that so important a piece of work had to be done in a hurry; yet, coming as it did, the necessity for studying the records of the section was a valuable initiation into a section which has always been doing things.

For instance, in 1925 we might have thought we were originating the *News-Letter*. I discovered that in 1918 under the chairmanship of G. E. Williamson the *News-Letter* had been employed to stimulate interest in the affairs of the section. Imagine my respect for history to read E. P. Gleason in the transactions of the first meeting of the section advocating the safety contest as a method of creating safe habits. Like other safety men, I had been stirred by the discovery that the human element rather than machine causes, accounts for the majority of industrial accidents. The proceedings show that starting with the first program and repeatedly thereafter our leaders have emphasized the point that accidents are due to inexperience, ignorance and other human causes. What the American Engineering Council finally worked out to a scientific conclusion, namely, that safety and increased production go together was stated with emphasis in 1915 by President H. W. Stokes, of the York Haven Paper Company.

I mention these things as showing the sort of leadership the section has had from its organization. To some of you present, this may be your first National Safety Congress. A banquet of 3,500 persons, a Council of 4,600 members, 3,000 of them member-companies, representing 153 industries—these are vast concepts. This Congress is, as the bulletin of the Massachusetts Safety Council puts it, "The most important convention of its kind in the world." We are proud of the fact that the Council itself only multiplies the spirit of the Paper and Pulp Section. The founders of this section were present formerly at the organization of the National Safety Council and contributed to its vision. We are fortunate that Shatson, Lundrigan, Turner, Costigane, Gleason, Wilson, Altman, and Phillips, men capable of growing themselves, have remained with us as pacemakers.

Progress of Pulp and Paper Section

The Paper and Pulp Section was organized in 1915, four years after the National Safety Council came into existence. Philadelphia was host to the Congress that year and 25 of the 30 persons present were from eastern companies. The attendance and program had been worked up by S. F. Shattuck, of Kimberly-Clark Company, G. E. Williamson of Strathmore Paper Company, and R. B. Robertson of Champion Fibre Company. Thirty-six member companies had signed up and Mr. Shattuck was elected first chairman. During the year following, the membership increased to ninety-two companies, but Chairman Shattuck, with vision that still characterizes the industry, reported "five hundred or six hundred companies who have not yet found their place in the fold." Today, with two hundred four member companies, controlling about 400 or 500 mills, we are still far below Mr. Shattuck's dream.

I should like to cull items from year to year with the double purpose of appreciating our past chairmen and of visualizing their plans for the section.

Some of us have felt that we might make a leap in progress if we could only hold a session of the section in connection with the American Paper and Pulp Association. In February, 1917, that experiment was tried out for us by Chairman Williamson and we note the impression that the attendance and response did not justify the effort. Apparently safety interest centers in actual operatives. The most successful meetings depended upon men and management. At any rate the annual meetings were not displaced by the New York experiment and the following fall found a regular session in connection with the National Safety Congress.

The Geographical Problem

At the 1917 meeting we note a suggestion from the secretary, A. G. Poundsford, that all the members of the Safe Practices Committee be appointed from one locality in order that numerous face-to-face meetings might be held. Mr. Poundsford was very early putting his finger on the geographical problem of our section, extending shoestring fashion from Maine to Ohio, and up into Minnesota, with flapping ends in the south and on the Pacific Coast and a strong side coil in Canada. Some of you present today probably have not attended a national congress since the last time the meeting was held in the east. The same thing is true of western mills. How to sustain interest, how to avoid loss of useful men, more especially, how to carry the influence of the National Safety Council every year into every region of our industry has become a live problem.

In the report of the 1917 meeting we run across some names with a familiar sound—G. W. Phillips, A. P. Costigane, John Lundrigan. In 1918 we find a few more—C. E. Jackson, Amiel Umberham, Franz H. Rosebush, R. M. Altman, pacemakers today in the section. At the 1918 meeting also, we note the beginning of another experience succeeding meetings have encountered. It was reported that while twenty-five new companies had joined during the year, ten former members had cancelled. Also, we note that the meeting at St. Louis, an out-of-the-way city for paper makers, attracted only thirty-two persons representing fifteen mills. However, Mr. Williamson, for the second time chairman, reported that the busi-

[1] Head, Department of Personnel, Northern Paper Mills, Green Bay, Wis.

Time-
tester of man and of belt

THEY were room-mates at college. Fraternity brothers—honor students—and a shifty pair of slashing halfbacks. When graduation came, the years beyond glowed rich in prospect. Both men had been schooled and trained alike. Their opportunities had been the same. They had an even start at scratch.

Take any two men—or any two belts—apparently of equal calibre. Only the years ahead will show. One slips, or breaks under the strain. A lack of stamina, perhaps, or a flaw in the fibre. These are weaknesses that no expert other than Time can detect.

Time is the great tester of specifications. Time only bows before inherent character—such character as has always been built into Condor Belt.

You can safely buy Condor Belt on name alone. Like all high grade belts, it conforms to rigid specifications. Weights of duck and friction tests in belts may be alike, but even these cannot foretell their span of life.

In Condor Belt, the component parts are built for aging. They are steeled against Time. The factors are constant. In your own shop you will find the proof. Match Condor—belt for belt—and let the outcome form your opinion.

Put a Condor Belt on your hardest drive. Let the result be the belt-buying guide for your entire plant.

THE MANHATTAN RUBBER MFG. CO.
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Condor BELT

ness of preventing accidents had begun in earnest. Frequency statistics showed an improvement of 31.1 over the preceding year.

Safe Practices Pamphlet Started

The year 1919 was significant as seeing the start of our Safe Practices Pamphlet. A. P. Costigane, eminent as a safety engineer, was at the helm that year and R. M. Altman was pressed into service as the head of the committee which was to work together under the sponsorship of the National Safety Council in the drafting of a Paper and Pulp Safety Code. Mr. Altman, Mr. Costigane and Mr. Williamson, associated with other outstanding safety men five years later gave the industry a Code which was published as Bulletin No. 410 Bureau of Labor Statistics, U. S. Department of Labor, and was approved by the American Engineering Standards Committee.

Be it noted in passing that whatever safety literature may be on the shelves of paper mills, this code is our leading authority. If the section had accomplished nothing more in its history, the Code would justify all the money and time spent in its proceedings.

The congress returned to Milwaukee in 1920, the city of its birth, and R. M. Altman was elected chairman; during his chairmanship the section responded to the call of the Council for statistical data on accidents.

Forty-five mills voluntarily began reporting annually. In succeeding years the number of mills reporting increased to fifty-five, sixty-six, ninety-nine, one hundred thirty-three, one hundred eighty-six. This is a service which becomes exceedingly valuable in connection with studies of accident experience upon which our rates are based. What happens in the industry as a whole determines the premiums of each of us, and what can be done to reduce premiums on each of us depends upon the concerted effort of all of us.

Boston entertained the congress in 1921 and G. E. Williamson of Strathmore Company was again drafted for the chairmanship. Safety Bulletins, printed and distributed by the Council, but originating in the member's plants, came up for discussion. Amiel Umberham, chairman of the bulletin committee, reported that seven member companies had cooperated in the production of twenty-six bulletins.

Mr. Williamson followed with a request to all member companies to submit their ideas in the shape of photographs or drawings. At this meeting, evidence of the active cooperation of the American Paper and Pulp Association was furnished by Major Oliver M. Porter, Secretary, in plans for a membership drive. The time was inopportune, however, the period of readjustment having begun, and only nine new members responded to the appeal. Nevertheless the plans suggested by Major Porter for securing new members should be dug up again and the resources of the American Paper and Pulp Association employed to the fullest extent.

Plans for Increasing Membership

During the last nine years we have received one hundred seven new members and have suffered seventy-four cancellations. Apparently our sales problem is two-fold; to sell a new member the value of concerted safety work and to keep him sold. But more about that later.

What "prospects" for membership have we in the industry?

Without checking the figures, the following illustrations will bear consideration. In the United States there are six hundred fifty-six companies operating eight hundred sixty-eight paper mills and three hundred twenty-five pulp mills. In Canada there are ninety-five companies operating seventy-two paper mills and one hundred thirteen pulp mills.

By states, companies, and membership, figures are as follows:

State	Companies	Mills	Members
New York	127	136	45
Maine	23	29	11
Pennsylvania	60	63	10
New Jersey	37	40	5
Massachusetts	66	67	23
Connecticut	34	39	2
Michigan	41	41	11
Illinois	27	27	31
Indiana	23	..	1
Wisconsin	47	..	42
Ohio	51	..	11
Minnesota	10	..	4
Vermont	14	..	..
Virginia	10	..	2
W. Va.	8	..	2
Delaware	6	..	1
Louisiana	9	..	5
Maryland	11	..	..
New Hampshire	22	..	3

There is no mystery about these figures. All of the mills of the industry, large or small, would profitably enjoy membership in this section. So far, half of the mills of the states have been reached. The question is: How can the section, dependent upon voluntary service, organize its efforts so that a larger proportion of our mills may be enrolled?

Coming back to our story: The next year, 1922, saw W. A. Gleason as chairman in the Congress assembled at Detroit. Mr. Gleason reporting on membership matters, stated that mills forced to cancel on account of business conditions had given assurance of their faith in the section and of their purpose to resume membership at the earliest moment. Nine new members had been gained, and the bulletin committee reported a new method of securing poster material. The National Safety Council had begun sending out a staff photographer to pose subjects suggested by interested members. The committee got together in one place and studied out a list of desirable ideas which were posed in various plants. We note at this meeting that much interest centered around methods of training foremen in safety matters. The foreman begins to figure as the key to accident prevention.

New Code Discussed

The 1923 Congress met in Buffalo with an attendance of sixty delegates representing twenty-nine member companies showing interest in a program related to health conditions and their bearing on accidents. Such matters as eyesight, hernia, specific diseases, high blood pressure are to be considered when men are put on the pay roll. Physical examinations pay for themselves from the standpoint of management and men. Safety was discussed in a large way by Dr. Hugh P. Baker, secretary of the American Paper and Pulp Association. He pointed out that the industry itself needs the watchful care of all whose livelihood is derived therefrom.

Protection of raw materials, assurance of a market for our product, provision for educated labor and protection against the inroads of European competition were pointed out as calling for widening vision.

At this meeting, the section applied itself to the discussion of the new Code, a preliminary draft of which was furnished for criticism. The committee was continued and given encouragement to complete their important venture.

The next year, 1924, saw G. W. Phillips, of Champion Fibre Company, a veteran safety man, in the chair and a congress in Louisville, Ky. Here was a test of the pulling power of the section. Louisville is well out of the line of paper-mill locations but for all of that nineteen mills and interested organizations, including the U. S. Bureau of Standards and several state industrial departments, sent thirty-two delegates to continue the discussion of the Code, now recognized as the most important task before the section. The Code, in mimeographed form was presented with parts covering the Yard, the Pulp Mill, Rag and old Paper Preparation, Acid Making, Chemical Processes of Making Pulp, Preparation of Pulp for the Machines, the Machine Room, the Finishing Department. It was decided that in form and substance the Yard and the Sulphite Divisions were fairly well taken care of. The

LOOK FURTHER SOUTH

LOOK TO MOBILE for the latest International mill: three big Kraft machines and a full equipment of Dilts New Type Beaters.

LOOK TO Bastrop, Camden, Bogalusa, Hodge, Tuscaloosa, all big Southern Kraft mills, and all making paper in Dilts New Type Beating Engines.

"Your paper is made in your Beaters"

Dilts New Type Beaters in Camden mill

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committee, with John M. Sandel of the Council staff as chief editor, was encouraged to continue the task.

M. G. Hoyman an Infatigable Worker

Cleveland, approximately at the center of our industry, claimed the 1925 congress, and M. G. Hoyman, safety man for Kimberly-Clark Company, the same company which furnished the first chairman, presided. At the preceding congress the section had decided that it is best to have the officers come from one region making it possible for several face-to-face meetings.

Mr. Hoyman is an indefatigable worker and under his inspiration a *News-Letter* was started. An intermill contest was held during the month of August, with forty-one contestants. The cup was won by Nekoosa-Edwards, one of the charter mills of both the National Safety Council and the Paper and Pulp section, and some idea of the interest aroused will be gained from the fact that sixteen mills, all with perfect records, came to Cleveland with strong hopes of carrying home the trophy. Fortunately an equalization factor was worked out by the Council and the entire sixteen mills were given standing according to the hazards and difficulties overcome.

The contest immediately appeared as a unifying activity between congress meetings. To maintain interest and especially to help mills to train their men in safe working habits, the forthcoming contest was slated for a period of six months. Mr. Hoyman, experienced in inter-mill contests, pleaded for an entrance list of not less than fifty mills and was rewarded by a registration of seventy-two mills.

As a postscript, it should be charged also to the enthusiasm of Hoyman that another Wisconsin man was chosen as his successor in office.

Contest Feature Proves Popular

In connection with the Cleveland meeting, a special conference was called of officers and committeemen new and old. The Chairman-elect, W. J. Peacock, of the Northern Paper Mills, Green Bay, Wisconsin, afterwards stating the program which this conference advocated mentioned the need for recovering the presence and counsel of former officers in an effort to build a section mid-year program that would interest members apart from the incidental stimulus of annual meetings. The contest feature, stimulated by a regular news-letter and by magazine publicity, appeared like an activity around which the service to members could be concentrated.

At the Cleveland Congress announcement was made by the Council of a decision to specialize during 1926 on regional conferences to bring the inspiration of the Safety Movement to the plants of its members.

This was welcome news and the new officers, all from one region, decided to ask for such a conference in Wisconsin. Whether by compliment to the chairman or by his own designs, the record is that such a conference was held in Green Bay, the chairman's home town. Under the guidance of the National Safety Council, this first conference was held in December of 1925, two months after the Cleveland congress, having the sponsorship of the American Pulp and Paper Superintendents' Association, the Engineering section, the Public Utilities section and the Woodworking section of the National Safety Council, the Industrial Commission of Wisconsin and the Chamber of Commerce, of Green Bay. The attendance in a one-day program was six hundred seventy-four, good enough for a beginning, but what interests us is that one hundred forty-five of this number came from thirty paper mills and allied industries accustomed to attending our section programs. The attendance at the Cleveland meeting, drawing from thirteen states and Canada was forty-three delegates representing twenty-six member companies. Here was a regional meeting, in the heart of a paper and pulp state, costing members a nominal $3.00 and traveling expenses per man, which tied all attendance records of the parent section. The Fox River Safety Conference became an annual event and one of its immediate results was ten new members for the section.

Regional Directors Appointed

In the past a fortunate few were able to follow the section wherever it went, to Milwaukee, to Philadelphia, Detroit, New York, Louisville, Boston, Buffalo, and Cleveland, but the majority attendance each year came from the mills of the vicinity. Enthusiasm lags in the member who cannot feel the pulse of the section oftener than once in three years. No wonder we had seventy-four cancellations in nine years. There was too little to hold members.

At the 1926 congress in Detroit the Wisconsin experience was sold to the section and from those present selections were made of eight Regional Directors, each to be in effect chairman in his own state, all being expected to radiate the influence and service of the section.

As a result during the following year conferences in which this section had some active part were set in Appleton, Wisconsin, Erie, Pa., and Grand Rapids, Mich., with a combined paper and pulp mill attendance for the year far greater than any meeting of the parent section. 1926 saw, too, an increased interest in the Cup Contest. There were as many mills with a perfect record each month as figured in the perfect column of August, 1925. In addition to the winner, the Neenah Mill of the Kimberly-Clark Company, six mills were given certificates for outstanding records, and such was the sportsmanship engendered by the contest that ninety-nine mills, an increase of thirty-three over the past high-water mark, sent their accident statistics to the Council. The activities of the year also served to increase interest in the annual meeting. Forty-one member companies sent seventy-three representatives to Detroit.

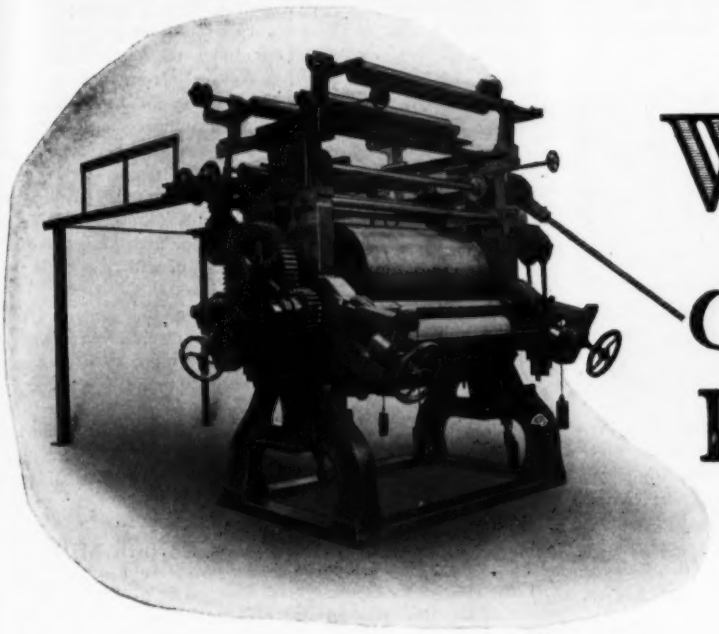
From now on the history of the section between congresses includes activities calling for more attention than the former programs. Midyear service enlisted the talents of many participants. Bob Altman and a patient committee completed their Code and had the satisfaction of seeing it published with the Government imprint. The contest became a monthly feature. Our trade papers featured safety items and certain contributions of our programs appeared in print so often that they were practically broacast throughout the industry.

The twelfth annual meeting of the section met with the sixteenth safety congress in Chicago and brought eighty delegates from thirteen states and two provinces of Canada, representing forty-seven mills. Our Regional Directors, eight in number, reported participation of the Paper and Pulp section in regional safety conferences in Boston and Worcester, Mass., in Erie, Pa., at Blue Ridge, N. C., at Grand Rapids, Mich., and at Sheboygan, Wis. Two cities in Wisconsin reported foremen's safety schools as a direct outgrowth of the Fox River Conference. One hundred thirty-three mills contributed their accident experience for 1926, an increase of thirty-four mills over the previous year. One hundred nineteen mills entered the 1926 contest and one hundred seven stayed to the finish. The severity rate for the one hundred seven mills was .63 and frequency 33.01. The severity rate of the first annual contest in 1925 was 1.746. The average number of mills with a perfect score for the contest was 37. Sixteen new members enrolled and nine transferred to our section from others. We closed the year with two hundred one members.

During the year our Regional Directors contributed an important set of articles for the National Safety News, secured entrants for the contest, helped to build programs in five conferences, encouraged mills to send in statistics, produced posters, gave considerable voluntary service to neighboring mills, and attended to the reporting of programs in the magazines of the industry. It is interesting to note the different ways in which Regional Directors, new to the game, found and made their own contracts.

Increased Service to Membership

It requires no imagination to see the possibilities for increased service to members as these Directors continue to originate plans for their own states.



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Producing Multi-Tone Effects With Single Color Distribution

Decorative printing, one of the most important elements in the rapidly enlarging market for converted light weight papers, has two distinct phases—surface printing and intaglio printing.

The Waldron Intaglio printer reproduces the depressed pattern from an engraved or etched copper roll. By varying the depth of this depression it is possible to produce the most artistic multi-tone effects with a single color ink distribution. For many purposes the 3-color Intaglio printer illustrated is therefore equal to a 6-color raised surface printer in range of color effects obtainable.

The Waldron Intaglio printer, when used in tandem with Waldron Festoon Drying equipment insuring properly calculated evaporation of color solvents, proves an exceptionally efficient unit in the converting of special wall papers, box paper, linings and utility wraps. Investigate the advantages of Intaglio printing for your processing and production.

Our Engineering Department has prepared some very instructive bulletins and papers covering the important phases of converting light weight papers including Intaglio and Raised Surface Printing. Copies will be sent gladly upon request.

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The present year, 1927-28, saw the foundation of three more annual regional conferences to serve paper mills as the result of the work of our regional directors. Ohio mills, to the number of seventeen, only two less than attended the Congress at Louisville, met and formed a region last November. Mr. Falst will tell us more about this Region.

Another Region, in the Valley of the Wisconsin River, under the leadership of Walter L. Mead, held its first conference also in November of 1927. Two hundred fifty paper and pulp men from twenty-five mills is the inspiring story.

At Blue Ridge, N. C., our veteran director, G. W. Phillips, in connection with the Y. M. C. A. is working up a conference in which safety matters play an important part.

The Michigan region, under the leadership of C. E. Torrance, of Bryant Paper Company, Kalamazoo, with only eleven members to draw upon, held a meeting in connection with the Michigan safety conference. Only four mills sent representatives but they received the worth of their money. Mr. Torrance is a valuable leader and with forty-one mills in the state, we hope he will feel that the beginning was worth while.

Under the encouragement of eight regional directors, our contest in 1928 enrolled one hundred twenty-four mills, an increase of five over 1927. Eight of these mills, we are told, completed the entire six months without a lost-time accident. The contest has been an improvement over that of 1927 in the totals achieved. I do not wish to steal the thunder of forthcoming reports, but a reduction of frequency among a hundred mills to the tune of 15.2, of severity 17.9 per cent makes one feel that the section, twelve years in training, is arriving at its stride.

I must forbear further comment on the things our regional directors have started. They will have something to say for themselves. What I have tried to accomplish in this sketch has been the development of a leading section from small beginnings, all the while under the inspiration of men of vision, all the while accumulating resources in experience, in members and esprit de corps.

But lest we think we have mastered our task, let us consider the facts pointed out to the industrial world by the American Engineering Council after an investigation covering over a year.

Organized Safety Work Profitable

We are encouraged by the findings of the engineers that organized safety work is profitable in high degree. The correlation between Safety and Production is 0.84. To put it in picturesque form. Fourteen thousand plants were investigated to discover whether the safest is the most efficient factory. Eighty-four times out of a hundred that was the case, making the most convincing proof of the worth of safety work ever produced.

Our statistics in the Paper and Pulp industry indicate that the rule applies. Safety does pay. It pays so certainly that a plant is blind which does not organize against accidents. We have one hundred eighty-six plants aware of the facts sufficiently to be willing to turn in their statistics. How about some six hundred plants who do not report?

How can we get to their attention certain other findings of the American Engineering Council: That production in the industry increased thirty-four per cent from 1914 to 1925, forty and seven tenths per cent for each person employed. There has been an increase in the intensity of modern production. Accidents have decreased on the average in proportion to the goods produced but production has become vast and accidents, on the whole are more numerous than formerly. Why?

Albert W. Whitney, speaking for the engineers, gives us the reasons. Machinery is displacing comparatively safe hand-working methods and machinery produces more accidents of greater severity. Automatic machinery has its influx of injuries due to repairs, always difficult to organize. Speed means increased exposure to danger and God only knows where the speed mania in industry will stop.

In the paper industry the cost of accidents is spread over our entire seven hundred eighty-three mills. I mean to say that premium costs are founded upon our united experience. We have had a demonstration of what can be done by united effort. Accidents can be put in the category of preventable waste and can be made to look foolish. Four times the number of mills reporting 1920 reduced severity averages from 2.60 to 1.57 and frequency from 46.34 to 27.42. We might have expected the original forty-five mills to make an improvement of this kind in seven years but the influence of the section has been such that new members have brought new blood to the fight. Witness the St. Croix mill in 1928 going the entire six months without an accident, and a score of other new members falling into stride within a year or two. The methods of the section and the backing offered make it highly probable that any new mill will reap with the rest of us.

The vision I want to give you is of a section organized into regions, each with a director keen for results. We have eight regions now. We might start at many more with profit to the industry. The machinery is at our command for doing a significant piece of work, more significant by far than anything we have done heretofore. There are men amongst us who like to attempt big things. My suggestion is that we consider men and methods and possible regions and take up the task of realizing the hopes of the men who have gone before us.

Low Water Handicaps Corinth Mill

[FROM OUR REGULAR CORRESPONDENT]

CORINTH, N. Y., December 22, 1928.—The ground wood department of the International Paper Company is finding it difficult to operate because of low water in the Hudson River at this point and weather reports do not indicate any relief for some time. The river has failed to rise enough to allow the operation of pulp presses in the mill and only a few grinders are now running. If this condition continues and pulp is needed in the local plant it is understood that a supply will be shipped from Cadyville and other holdings of the International Paper Company.

In the meantime the paper machines at the plant are running full head turning out several hundred tons of news print daily. Continued cold weather and failure of the river to rise would evidently play havoc and force curtailment in other departments of the big plant. Approximately 780 men are now being employed in the news print departments and production is proceeding at a better gait than has existed for several months. General business conditions are excellent and an air of prosperity is being felt in all sections of the village.

Pine Trees in New Ontario Districts

Increase in the planting of pine trees from 10,000,000 to 20,000,000 annually and the establishment of forestry policy to perpetuate the timber and pulpwood of New Ontario, were announced by the Hon. William Finlayson, Minister of Lands and Forests for Ontario, in an address before the Royal Canadian Institute in Toronto this week. "In the past we were so wealthy in timber that we never made any attempt to formulate, until quite recently, a business policy that would conserve and foster our resources," he said. "On the other hand we cut and burnt good timber lavishly. Now, however, we are trying to get the people of the province interested in forest preservation." Undeveloped and potential forest wealth of the province of Ontario were officially placed at $600,000,000, he stated.

Coe Board Drying System

The Coe Manufacturing Company, Painesville, Ohio, has just issued a very attractive catalog giving detailed information relative to its board drying system.

The catalog carries many views showing installations of the Coe Roller Dryers in board plants.

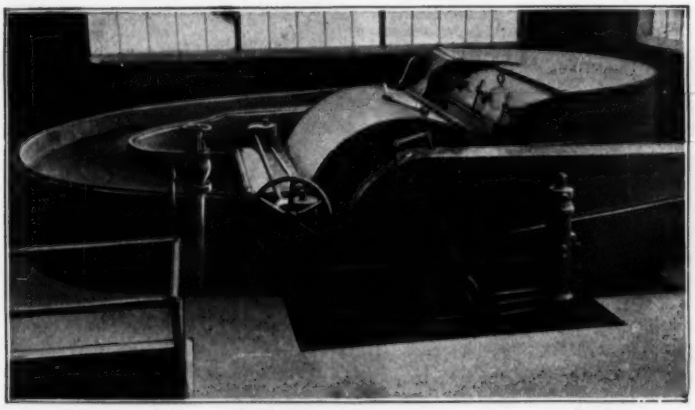
This catalog is worthy of a place on every buyers' desk, and can be had by writing to the Coe Manufacturing Co., at Painsville, Ohio.

Less Beating Time

Less Floor Space

Less Power

Less Labor



Less First Cost

Less Equipment

With the Niagara Beater-

All of the above are outstanding reasons for the Niagara Beater—an improvement over the older type beaters. But with these savings better paper is produced, because the Niagara Beater beats thoroughly and uniformly even though at less beating cost. With it all "dead spots" are eliminated.

The 159 in use today attest to the economy and durability of the Niagara Beater—and the savings on the six items enumerated above merit your consideration.

Our special booklet on the Niagara Beater contains complete information. We'll gladly send you a copy upon request. Write today.

Send for this Booklet-

It contains valuable information on beating of interest to every mill.

VALLEY Equipment Includes

Beaters: Holland and Niagara
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Cylinder Paper Machines With Stock Inlet
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Machinery for Paper and Pulp Mills

APPLETON WISCONSIN

New York Office: 350 Madison Avenue
Western Manufacturing & Sales Division, Smith & Valley Iron Works Co. Portland, Oregon

New York Trade Jottings

Victor Galaup, Inc., dealers in paper mill supplies, have moved their offices from 260 West Broadway to 350 Madison avenue, New York.

* * *

Albert Lorenz, of D. Benedetto, Inc., paper stock dealers, of 383 Water street, New York, has been elected president for the ensuing year of the New York Association of Dealers in Paper Mills' Supplies.

* * *

Frank J. Krebs, long affiliated with the engineering and production department of the Hamersley Manufacturing Company, paper manufacturers, of Garfield, N. J., is resigning to accept a position in a similar capacity with the Alexander Herz Company, New York City, beginning December 31, 1928.

* * *

The Joint Committee on Approved Pulp Testing Chemists for the Paper Industry of the United States, with headquarters at 18 East 41st street, New York, announces that Wesley M. Osborne, of the Grays Harbor Pulp and Paper Company, has been accepted as an approved pulp testing chemist and is listed as such, effective December 8, 1928.

* * *

H. D. Savage, president of the Combustion Corporation of America, 200 Madison avenue, New York, announces the election of Carl F. Weigel as vice-president and general manager of its subsidiary, the Hedges-Walsh-Weidner Company, Chattanooga, Tenn. Prior to the combination of the Walsh & Weidner Boiler Company and the Casey-Hedges Company, which occurred the early part of this year, Mr. Weigel was chief engineer of the Walsh & Weidner Boiler Company, which position he had occupied for many years. From the date of the combination of these two companies up to the present, Mr. Weigel has served as chief engineer of the combined organization.

* * *

Common stockholders of the International Paper and Power Company, New York, will be notified shortly of their right to subscribe to approximately 1,500,000 shares of Class C common stock at $10 per share, it is reported. New Stock will be offered on the basis of common stock held, it is understood. There are outstanding 1,000,000 shares of Class A, B and C common stock of the International Paper Company. Offering is expected to be limited to stockholders of International Paper and Power Company, for which International Paper Company common stock was exchanged on the basis of one share of each of the classes of common for each share of International Paper common. Proposed financing would provide approximately $15,000,000 of the $35,000,000 which International Paper and Power Company plans to pay for a block of New England Power Association common stock, on which it has an option. Exercising this option would bring International Paper's interest in the association to 81 per cent of the outstanding common stock.

To Build Up Brotherhood

ALBANY, N. Y., December 17, 1928.—Frank P. Barry, first vice-president of the International Brotherhood of Papermakers, has been sent to Northern New York in an effort now being made to build up the organization in paper mill centers. He may later be sent to Holyoke, Mass., for a similar purpose. Six hundred new members is the goal for which Mr. Barry will work between now and next spring. It is believed that a large percentage of the new members will be gained in Northern New York as well as in and around Holyoke. President Smith was in Millinocket, Me., during the past week when he addressed the local at that place on labor conditions. He was called to the Maine paper mill town principally to adjust a grievance between the local at that place and the Great Northern Paper Company.

Boston Paper Trade Happenings

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., December 24, 1928.—Arthur E. Ham & Sons, of 10 High street, have leased another floor at 40 Purchase street, where their warehouse is located. This lease gives the company three entire floors and three times the space that the concern started with eight and a half years ago. At that time Mr. Ham was the only member of the firm. Now associated with him are his three sons, Herbert C., James L. and A. Lawrence Ham.

Carter, Rice & Co. Corporation is preparing a new price list, which includes both the Carter Rice items and those of the Charles A. Esty Division at Worcester, Mass. Charles A. Esty, general manager of the firm, has returned from a two weeks trip to the South. There are rumors of more mergers in the paper trade, but as yet nothing official has been given out.

Carter, Rice & Co. Corporation is mailing another piece in the Bristol campaign, the Concord Index, which shows the ruling qualities of this stock.

R. H. Spaulding, president of the Spaulding Fiber Company, Inc., Rochester, N. H., and Elliott Rogers, president of the Rogers Fibre Company, Leatheroid Division, Kennebunkport, Me., called on the trade last week.

The 1929 Calendar of Tileston & Hollingsworth Company, mailed last week, "has been produced under the supervision of the Boston Club of Printing House Craftsmen. Under its direction, as in other years, thirteen New England printers working independently of each other have so combined their skill in uniting type, ink and paper as to prove their right to a heritage of skillful hand and active brain." The pictures reproduced are from original prints in the possession of Amor and Valentine Hollingsworth. They include prominent men in the early history of the country, views of old Boston, Harvard University, the Battle of Lexington, and engagement between the Constellation and L'Insurgent. On the outer sheet, which contains a picture of Herbert Hoover, is the following:

"Five years ago we conceived the idea of accomplishing two things with one calendar: popularizing our Papers of Old Fashioned Quality, and displaying the skill of New England printers. In each of these five years we have shown many of the papers made at our mill in Boston, and we have demonstrated the craftsmanship of thirteen New England printers. After the calendar has been distributed, it has then been shown before representative associations of the graphic arts in the New England states, and each of the sheets has been vigorously analyzed—to improve the technique and artistry of the printing industry."

W. B. Clements Leaves Fitchburg Paper Co.

FITCHBURG, Mass., December 24, 1928.—W. B. Clements, assistant general superintendent of the Fitchburg Paper Company of Fitchburg, Mass., has resigned his position, to take effect January 1. Before going to the Fitchburg company Mr. Clements was for many years superintendent of the Riverside Paper Company Division of the American Writing Paper Company.

After a brief rest and visit with his old friends in Holyoke, Mr. Clements will again take up active duties in the paper field, with one of several offers that he has under consideration.

High Taxes May Cause Removal

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., December 21, 1928.—The Oregon Pulp and Paper company, which is located in Salem, may be closed or moved to another state, because of high taxes prevailing in Oregon, according to indications coming from F. W. Leadbetter, president of the company, who was in Salem late in December conferring with his associates in regard to this problem.

Mr. Leadbetter said that taxes on the Salem mill will aggregate $4000 a month, while taxes on a similar industry at Vancouver, Washington, amount to only $500 a month.

AUSTIN OFFERS
the Paper and Pulp Industry
an Economical Building Service

WITH a complete nation-wide organization specializing in the industrial field, Austin is ready on short notice to give valuable assistance to your own engineers in the layout and design of mills, power plants, etc.; and to plan efficient, economical buildings based on their floor plans and clearance diagrams.

Trained construction men on Austin's permanent staff from Coast to Coast, will carry through the building operations with maximum speed and at low cost.

In remodeling existing buildings, Austin knows how to carry on the new construction work with a minimum of disturbance to present operations.

Under the Austin Method of Undivided Responsibility, one lump sum contract covers design and construction, and guarantees

1. Low total cost for the complete project *in advance.*

2. Completion date within a specified short time, with bonus and penalty clause if desired.

3. High quality of materials and workmanship.

Let Austin figure with you or your paper mill engineers on your contemplated building project, whether a complete new mill or changes or extensions to present facilities. Approximate costs and other information will be furnished promptly. Wire, phone the nearest office or mail the memo.

THE AUSTIN COMPANY—Engineers and Builders—CLEVELAND

New York Chicago Philadelphia St. Louis Detroit
Cincinnati Pittsburgh Seattle Portland
The Austin Company of Texas: Dallas
The Austin Company of California: Los Angeles and San Francisco

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Complete Building Service

Memo to THE AUSTIN COMPANY, *Cleveland*— We are interested in a
_____project containing_____sq. ft. Send me a personal copy of
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Firm_____ City_____
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Member A. B. C. Audit Bureau of Circulations

Vol. LXXXVII New York, December 27, 1928 No. 26

COMING EVENTS

Fifty-second Anniversary of the American Paper and Pulp Association. Convention and Meeting of Affiliated Associations. Waldorf-Astoria Hotel, February 18-21. Annual Meeting, Thursday, February 21. Annual Banquet, Grand Ball Room, Thursday, February 21.

National Paper Trade Association of the United States. Convention, Waldorf-Astoria Hotel, February 18-20.

Technical Association of the Pulp and Paper Industry. Convention, Waldorf-Astoria Hotel, February 18-21. Annual Banquet, Hotel Commodore, Wednesday, February 20.

Salesmen's Association of the Paper Industry. Annual Meeting, Waldorf-Astoria Hotel, Tuesday, February 19. Luncheon, Tuesday, February 19.

New York Association of Dealers in Paper Mill Supplies. Annual Banquet, Hotel Commodore, Wednesday, February 20.

Canadian Pulp and Paper Association. Convention, Ritz-Carlton Hotel, Montreal, January 23-25. Annual Banquet, Friday, January 25.

CHEMICAL INDUSTRIES EXPOSITION

In a study of the chemical industry made during June last, a banking company in New York found that the American Chemical Industry favored by its large domestic market, has grown to be the largest in the world with an annual production of $2,278,000,000.00 This growth is attributed to the more numerous and prosperous population and the rapid expansion of industries in which chemicals are used. The United States is not independent of the products of other countries and while it is the second largest exporter in the world, it is also the largest importer, and its imports are increasing. In 1927 chemicals imported were valued at $198,903,000.00 while exports amounted to $184,133,000.00.

It is known throughout the world that the chemical process industries more rapidly than most others find it necessary to replace equipment. This is due to obsolesence, chemical corrosion, thermal breakage, and mechanical wear and tear, and a rather general policy has been adopted in the American industries of amortizing the investments in operating equipment in eight to ten years. A conservative estimate was recently made that these industries spend over one hundred and fifty million dollars a year for modernizing and replacements.

The Exposition of Chemical Industries which is to be held for the twelfth time in the Grand Central Palace, New York, May 6 to 11, 1929, has been a leader in the creation, development, and growth of the chemical industries of America. It brings together among its exhibits between 350 and 450 exhibitors displaying their products, which include the varied types like chemical engineering equipment and processes, special machinery as used in the various industries which utilized the Exposition to secure new equipment, ideas and inspiration. It embraces in this wide range of exhibits products like apparatus for precise measurement of pressure, volume, flow, temperature, time; laboratory apparatus, supplies, chemicals, etc.; the raw materials used in all the chemical industries, the chemicals, dyestuffs, technical materials and chemical products which are applied in the industries and arts.

There are in the Exposition special sections for Laboratory Equipment, a Southern Section, and a Canadian Section, where in the first case the raw materials, minerals, agricultural, and forestry products, suitable for development and manufacture as well as the developed and awaiting development water powers are likewise shown, of the Southern States which are at this time a most fertile field for finance and industry to invest in, and the Canadian Section too demonstrates these possibilities.

In these special sections the communities located near or at the resources for which financial and industrial development is desired make headquarters, displaying maps, graphic charts showing why a factory should be located there to utilize the raw materials they show; railroad companies and State Governments are also among these exhibitors and in consequence of these exhibits in years past, have brought to their localities plants which have created big industries and brought other related businesses.

Special consideration has been given to the methods of packing and shipping the products produced by the chemical industries. These products must not only reach their destinations in perfect condition and in presentable shape but must be prepared attractively to interest the buyer. While some plants make their own peculiar packaging material, the majority purchase from firms who specialize in the manufacture of these commodities These firms have devoted much research and expense in producing the best variety of container for the products for which they propose them. To give these firms an opportunity to present their products a special Section for Containers, Packaging and equipment was instituted in the Exposition some years ago, and there are located such automatic machines as fill bottles, bags, cartons, pails, barrels, etc. and there will be found labeling machinery and all types of container and machines to make or assemble these containers.

One of the reasons for the tremendous production on such a large scale of the American industries is because the industries employ not large numbers of men but large numbers of machines. and labor for moving and transporting raw material, intermediate products and the finished products is almost unknown. This work is done by machines which do all the conveying of gaseous, liquid, and solid material, by means of air conveying, pneumatic conveying, or by fuel or electricity consuming machines for lateral or vertical conveying and transportation. In the great Chemical Industries Exposition space for exhibits of this nature is largely devoted in a special Section for Materials Handling Equipment.

The Students' Course of lectures which has been an institution in the past Expositions will be repeated again. These lectures by authorities in their work are divided into two groups: one for elementary students where an extension knowledge has not been gained, and the other an advanced course for senior and graduate students. These courses have been well attended and

many colleges give credit to the students for work done which is tabulated and graded at the Exposition by Dr. W. T. Read, Professor of Chemistry from Texas Technological College, and a member of the Exposition Advisory Committee who is in charge of the course.

May Build Paper Mill in Kentucky

LOUISVILLE, Ky., December 24, 1928.—Kentucky Forest Service has been asked by one of the largest paper manufacturing companies in the United States to help them in selecting a site for one of their wood pulp mills in Kentucky, according to W. E. Jackson, Jr., State Forester.

This company is very much interested in securing information as to the location and amount and kind of wood available for the manufacture of woodpulp. This offers a fine chance for the different Chambers of Commerce located in the timberland section to secure this pulp mill for their city.

Many natural conditions favor Kentucky as a most advantageous location for wood-using industries and open up a bright future industrially if the timber yield is sustained. In addition to the remaining forests of varied hardwood timber still standing in this State, Kentucky is bordered on all sides by extensive hardwood producing areas of other States. This makes Kentucky naturally the hub of the most important hardwood region of the country.

The present area of potential forest land in the State is estimated at 10,500,000 acres. This includes 1,618,746 acres of unimproved farm land, 6,018,280 acres of woodland in farms and over 2,800,000 acres of other forest land.

In locating this woodpulp mill in Kentucky there necessarily would have to be a labor and timber supply to keep the mill running and make the investment worth while.

The Kentucky Forest Service, Frankfort, Ky., wishes to hear from those cities who are interested in securing this mill for their industrial development.

I. P. Offers Stock To Employees

The International Paper Company is making an offering of International Paper and Power Company seven per cent preferred stock to its employees. This is the fourth stock offering of the Company.

In the first offering—made in 1925—2,002 employees subscribed to a total of 7,189 shares. 2,677 employees subscribed to a total of 8,488 shares under the 1926 offering of preferred stock, and under the last year's offering, 3,310 employees subscribed to a total of 11,247 shares.

The plan is designed to make it possible for all employees to become stockholders. The number of shares which employees may buy is based on their pay; three shares if their pay is thirty dollars a week or less, four shares if it is forty dollars a week or less, but more than thirty dollars a week, and so on.

Employees may pay for their stock in full or by installments as they prefer. If payment is made by installments, a fixed amount is deducted regularly from their pay.

In addition to the dividends on the stock, the company pays a bonus each year if the subscriber is still working for the company and still holds his stock. Under the present offering, a bonus, as above, of one dollar a share will be paid on January 1, 1930, and increasing at the rate of a dollar a share a year until a last fixed bonus of five dollars a share is paid on January 1, 1934.

Employees are free to sell their stock at any time they want to after they have paid for it, but selling their stock stops the bonus.

Progress on Sitka Pulp and Paper Mill

PORTLAND, Ore., December 21, 1928—The Sitka Spruce Pulp and Paper company's new mill at Empire, Ore., has progressed now to the pouring of concrete by the Mitchell Construction company. Nonda Anderson of Reedsport is in charge of construction. Six buildings at first will provide about 20,000 feet of floor space.

Bird & Son Set New Non-Accident Record

Not a single accident for 39 days from September 29 to November 7 is the new record set by Bird & Son, Inc. for all of their plants in this country. The period includes the entire calendar month of October which is the first time in their history that all plants have been successful in establishing a clean slate.

Participating in this record achievement are 1850 workers employed in the company's separate plants located at East Walpole and Norwood, Mass., Phillipsdale, R. I. and Chicago, Ill.

Bird & Son has maintained a complete safety organization and carried on a careful supervision of educational work to reduce accidents in all plants for the past fifteen years or so and no special effort nor extraordinary attempt to establish a new record was set during that month. When the statistics were compiled for October it was known that all plants had gone without a lost time accident.

While the October record was 100 per cent, previous months have shown but comparatively few accidents during the past year, there being only 37 to November 1 this year. Fifteen years ago with 500 less employees the company was experiencing about 360 accidents per year. This has gradually been reduced —ten years ago to 198, five years ago 135 and last year to 98.

A year ago in the Paper Mill Safety Contest conducted under the auspices of the National Safety Council, Bird & Son's East Walpole paper mill stood second out of 130 paper mills throughout the country and received a special certificate of merit. The Phillipsdale Plant stood third and also received a certificate.

The mills of Bird & Son, Inc., manufacturing as they do paper, paper boxes, prepared roofing and floor coverings, with the large amount of heavy, fast running machinery, are recognized as hazardous ones and the remarkable reduction that they have made in the past few years, particularly the perfect record made during the past month, is one to be proud of. The record is also remarkable in that the educational and supervisory work of the Bird organization had to be extended over factories, widely separated in three different states.

Paper Makers Brotherhood Expands

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., December 22, 1928.—Announcement that the International Brotherhood of Paper Makers has organized more new locals this year than during any similar period in its history will be made at the annual meeting of the executive board in this city on January 7. During the past eleven months new locals have received their charters at Harrisville and Herrings, N. Y.; Kalamazoo, Mich.; Owego, N. Y.; Quebec, Gatineau, Dolbeau, St. Anne, Brompton, and Kapuskasing, all located in Canada.

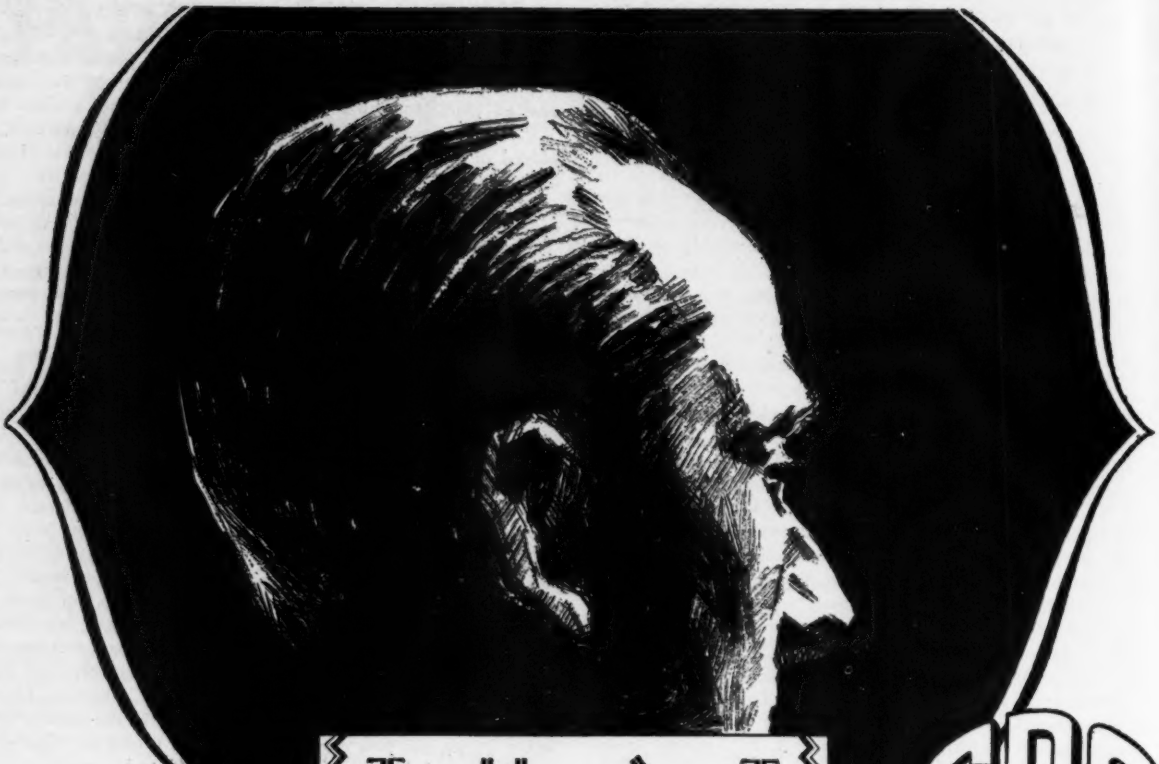
President William R. Smith returned this week from Boston, where he had a conference with officials of the Great Northern Paper Company relative to an adjustment of the wage scale. Mr. Smith and Arthur Huggins, secretary of the Brotherhood, are now mapping out the program that will be discussed at the coming meeting of the executive board.

Pulp and Paper Plants Welcomed by Alaska

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., December 21, 1928.—George Alexander Parks, governor of Alaska, passed through Portland, Ore., recently, on his way to Washington, D. C. While in the city he spoke of the high hopes which Alaska now holds regarding the advent of large pulp and paper interests in this territory.

"Engineers of the Zellerbach and Cameron interests worked in Alaska all summer, surveying timber and water power," the governor said, "two tracts having been leased—one near Ketchikan and the other near Juneau. According to contracts made with the government for this timber, operations must start within a year or so, and we feel that this is a great step forward toward a new industrial development."



CONSIDERATION of Liquid Chlorine should start with the assumption of quality. It is the case with E B G. High excellence is established by expert technical control . . and by plant facilities which attain a broad and scientific plane. But the user of E B G Liquid Chlorine benefits by another factor, also. It is more than quality of product, celerity of service, responsibility of organization . . . it is that intangible something which manifests itself at critical moments when its absence might prove serious and costly. It is an advantage of practical value, as E B G customers know, and one from which they invariably profit.

Liquid Chlorine

Electro Bleaching Gas Co.

PIONEER MANUFACTURERS of LIQUID CHLORINE

Plant: NIAGARA FALLS, N.Y.

Main office 9 East 41st Street New York.

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Paper Board and Its Manufacture—XIII

By A. O. Bragg[1]

EDITOR'S NOTE: Readers of the PAPER TRADE JOURNAL will probably recall the series of twelve articles on paper board manufacture by Mr. Bragg which appeared in Paper and this publication from time to time between June 26, 1924, and May 20, 1926. Beginning with this contribution the series will be continued by the author and will cover the following subjects: stock preparation, multicylinder machines and their practical operation, finishing operations for the following classes of boards: chipboard, set-up box board, test liner and container boards, folding box boards, .009 (corrugating straw paper), strawboard, binders, fibreboard, electrical insulating and similar boards (one cylinder, wet machine type), saturating felt (for asphalt roofings), building and insulating boards (special machines), miscellaneous multicylinder machine products such as bogers papers, tag, wrappers, etc.

To bring the material contained in this series to date two sketches are included which supersede those which appeared in the installment in the PAPER TRADE JOURNAL of May 13, 1926. The preliminary treatment of paper stock was covered in the installment of May 20, 1926. This article is a continuation of the subject.

Shartle Breaker Beater System

The following gives power consumption for de-fibering, cleaning and thickening:

	Mill 1	Mill 2	Mill 3	Mill 4
1. Grade of stock	Chip	Chip	Chip stock furnished to filler and B liner beaters on kraft lined container	board
2. Tons per 24 hrs.	110	110	85	100
3. Horse power	80–200 100 average	98.5	100 average	150
4. HP. hrs. per ton per 24 hrs.	22	21.5	28	36

The power consumption averages from one to one and a quarter horsepower per ton of stock. This assumes that make-up water at 160-165 deg. F. is used to cause quick disintegration of sized paper present, as well as paraffine, chewing gum, sealing wax, etc., so that cylinder wires and sheet will not become spotted. In the case of Mill 4, the breaker beater system was too large for the machine requirements, which gives an exaggerated idea of the power consumption requirement. Referring to Mills 3 and 4, higher quality waste papers are used for the filler and back liner of Kraft Lined Container board (liner) than in the manufacture of plain chipboard. They contain much heavily sized paper, which requires a longer time to defiber, this in turn reducing the output of the breaker beater and increasing the horsepower hours per ton.

The power required is a relative matter, the true basis being the amount necessary to defiber, clean and thicken the stock necessary for a certain amount of a certain quality. The power is less, if riffling and thickening are not practised, as in some cases, if the stock is not cleaned, more power is necessary to brush it out in the jordans to avoid specks in the sheet. This in turn shortens the stock excessively, causing poor bending and retarding the drying. An important consideration is that of properly coordinating the size of breaker beater system with the mill production and its stock demand.

It was first thought that the stock delivered from the thickeners would be sufficiently clean to allow the total substitution of chip stock for news in folding box boards of high grade. This has not been found to be the case due probably to the tenacity with which fine dirt clings to fibers when wet. Therefore some installations made with the first plan in view, are oversize because it is not possible to make the above substitution to more than 50 per cent without seriously sacrificing the cleanliness of the sheet. Some improvement can be made by screening the stock before thickening; by using flat screens with fine slots, as is being done in some mills. The best results are obtained by removing the dust when it and the papers are still dry—by dusters, although this is not now being done to the writer's knowledge.

Oversize installations, such as the foregoing, do not run continuously inasmuch as the thickened stock chest becomes filled and the thickeners must be shut down. Power consumption in such installations is also excessive. The proper size unit is that in which the machine demands are equal to the capacity of the thickeners running continuously.

Stock Distribution

There are two methods of stock distribution—the "loop" and gravity systems. In the first, the stock is pumped continuously through the pipe lines supplying the beaters, returning to the chest. In the gravity system, the stock is pumped to a tank located above the beater room floor and feeding the secondary beaters by gravity. In some cases, the thickened stock is distributed directly to the jordans. The loop system is preferable. The continuous circulation defibers the stock to some extent, and promotes perfect mixing and uniform consistency. Moreover, there are no interruptions due to clogged pipes and fittings, as may happen when using the gravity plan. In this, in case no stock has been supplied to beaters at the ends of the pipe lines, for some time, the water drains away from the stock left there and becoming thick cloggs the valves and fittings. This may require the disassembling entire lengths of pipe to clean them.

[1] Oliver United Filters Company, New York, N. Y.

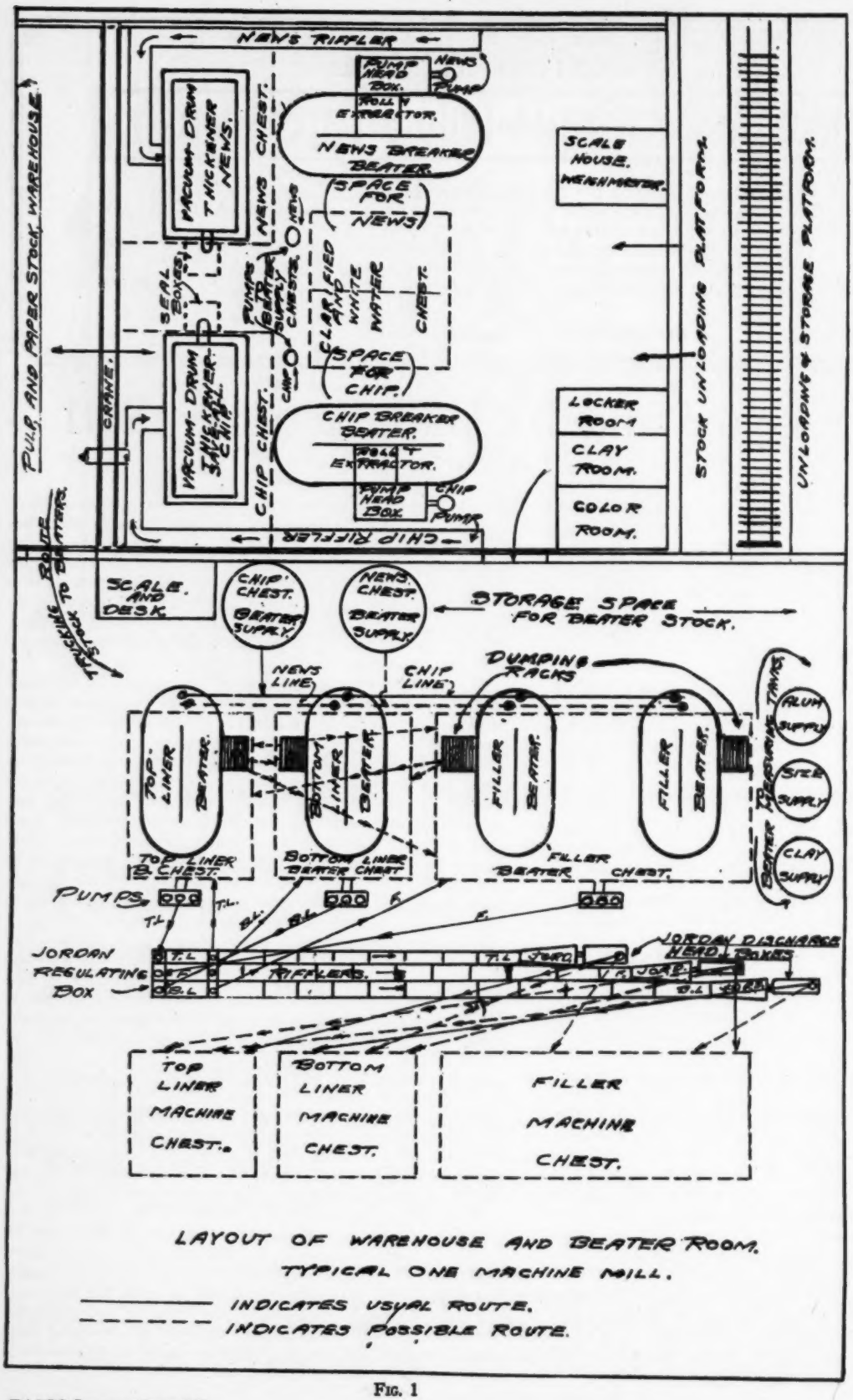


FIG. 1

A modern development is the use of vacuum drum filters as combined thickeners and save-alls. See Figs. 1 and 2. This consists of a drum, covered with 40 to 60 mesh wire, which rotates in a vat, and with 80 to 90 per cent of its area submerged in the thin stock. This drum is under a high vacuum, over the whole submerged area. This machine is extensively used as a save-all. A small amount of stock from the beater chest is thoroughly mixed with the white water. This is conducted into the vat where the high vacuum forms a sheet on the drum, consisting of the beater chest stock and 80 to 90 per cent of the white water fiber adhering to it. The sheet is then removed, thinned to chest consistency and returned to the beater chest.

When used as a combined thickener and save-all, the machine white water is used to dilute the stock for riffling, while the chip or news from the breaker beater mixes with it in the rifflers and forms the thick mat on the drum. The stock can be delivered from the drum as high as 15 per cent consistency, thus being well adapted to use in high speed, high consistency beaters. The thick sheet is thinned to the required chest or beater consistency with white water. Because 80 to 90 per cent of the wire is submerged in stock at all times, and because this is under high vacuum, the thickening capacity in tons per square foot of wire area per day is much higher than

the usual decker. The clarified white water, discharging by gravity through vertical water leg pipes which induce the necessary vacuum, contains an extremely low amount of fiber, far less than from the usual wire type of save-all. It is therefore suitable for re-use on machine showers, water deckles, head boxes, for make-up, etc.

Machine white water, or that from an ordinary thickener or save-all, cannot be used in tubular or condenser type make-up water heaters, which are the most efficient from the standpoint of heat saving. The large amount of fiber quickly coats the tubes, preventing heat transmission and heating of the water. Water clarified by a vacuum drum thickener is well suited for condenser type heaters, as the small amount of fiber does not readily foul the tubes. It is therefore more economical to use heated vacuum drum thickener filtrate for beater and breaker beater make-up, than to heat white water for the purpose.

In many mills, not enough attention is given to operating details of the breaker beater system to obtain the best results. The variation in consistency of stock to the rifflers is considerable, as it is difficult to gauge by hand control, the proper amount of water for the intermittent paper stock furnishing. A skilled operator with paper stock at convenient access, continual watchfulness and a constant make up water supply of even temperature and pressure, can, however, maintain a surpising unifomity. If forced to go to a distance for paper stock he may, for example, leave the water valve on and the stock could be too dilute when he returned. This could have been prevented if he had remained at the breaker.

The head box into which the extracted stock flows, should be as large as possible to minimize consistency fluctuations. For the same reason, proper scheduling of the frequency of furnishing bales into the tub is also of help, by preventing the furnishing of an excess or deficiency of stock during a given time.

Consistency Regulators

Automatic consistency regulators have been tried but are not very satisfactory, due to plugging from refuse. A float, if properly arranged, can be used to advantage to give an alarm or flash a red light when the consistency becomes too high or low, and thus act as a guide for the furnishers. The tub of the breaker beater should not be larger than necessary, since the larger it is, the more stock of incorrect consistency there will be to dispose of in case of any unusual variation.

The stock is frequently run too thick or too thin in the rufflers. This may be due to irregular consistency from the breaker, or to erratic water pressure in the water line for diluting. The consistency in the rifflers should be between 0.5 and 1.0 per cent bone dry. If thicker than 1.0 per cent, settling of refuse will be poor and stock will be dirty. If thinner than 0.5 per cent, the refuse will tend to settle out at the inlet end of the rifflers only, causing overflows. The smaller threads, rags, etc. can be removed by vertical bars or spikes; and the wood, cork and floating material, by skimmers. The rifflers should be so constructed that the settled material can be flushed out with a hose at frequent intervals; and the skimmers and vertical rods for strings, should be kept clean. The riffler should be at least 150 feet long. The cross sectional area should be proportioned to the tonnage handled, so that the flow velocity of the dilute stock will not be so great that the refuse will not have time to settle, or so slow that most of the settling will occur in the first few feet of the riffler. The refuse should settle out along the greater part of the length of the riffler. The usual dimensions are 48 to 60 inches wide and 24 to 36 inches deep.

Refuse Handling

The long breaker tub promotes good settling. The settled refuse should be removed at least every eight hours through the gate in the side of the tub. The rag catcher should be used every two or three hours the rags and strings being placed on a grid of heavy pipes and the adhering fiber washed into the tub. The whole system from tub to beater supply lines should be thoroughly cleaned weekly.

Some difficulty has been experienced with the backfall perforations becoming plugged with refuse, centrifugal force not being sufficient to keep them open. This has been overcome by replacement of the perforations with an open slot discharging into the head box.

The breaker beater system is the most efficient and widely used method for the defibering, cleaning and thickening of news, chip and other board mill stocks in large amounts. The application depends on mill conditions and product. In a plain chipboard milt, mixed papers only would be furnished, the thickened stock going to secondary beaters if size, and alum are used, or direct to the jordans, from the breaker chest, if only alum is used, as is necessary in any case. Alum can be continuously added as a solution to the stock before jordaning.

For solid newsboard, or news filler and back liner of folding and set up box boards, all newspapers would be used, pumping the slush to secondary beaters. All newspapers are used for the filler and back of the highest grade patent coated newsboards. However, solid newsboard is being made by furnishing half newspapers and half mixed papers to the breaker beater, thence to secondary beaters for size, alum, filler and color. Some dump stock can be used instead of mixed papers, in cheaper grades, still further reducing the furnish cost. Folding boxboard of good quality is now made using two breaker beater systems, one on news and one on chip. (Fig. 2.) As explained above, chip can be used to replace news, up to 50 per cent by weight.

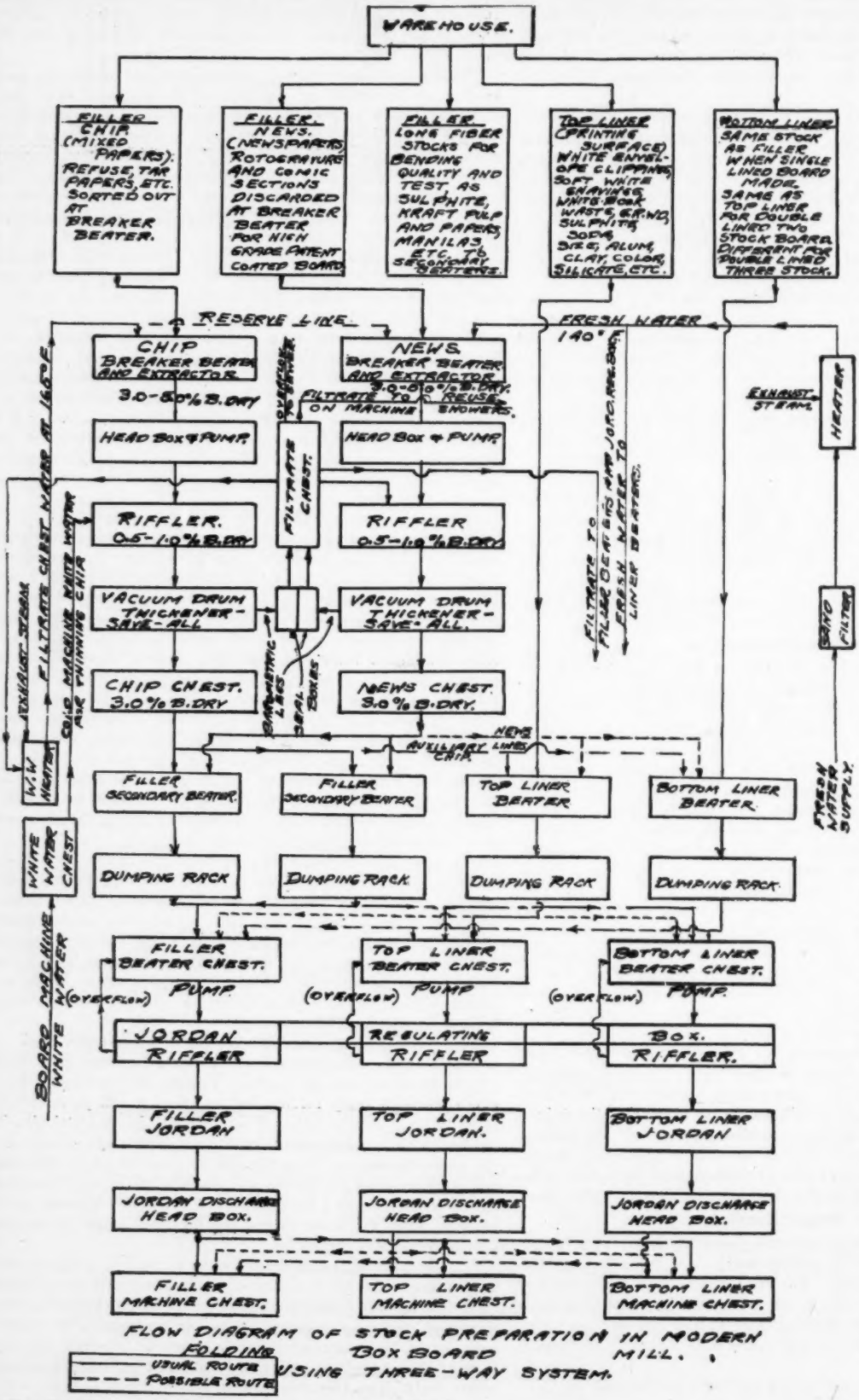
Continuous Beaters

The second class of defibering equipment used, consists of regular or high speed beaters, to which stock extracting devices are fitted and to which stock is continuously furnished. They are far superior to the out of date method of furnishing the waste papers without preliminary treatment, to the beaters along with the pulp, finishing the whole in one operation. If stock is passed from continuous beaters to secondary beaters through settling troughs, dumping racks, rag catchers, etc., considerable foreign material will be eliminated, and considerable is removed in the chests. However, the beater stock consistency is too high for good settling of refuse. Plugging of valves, head boxes, pumps and jordans are still frequent. They cannot equal the economies of the breaker system with rifflers and thickeners, or these combined with flat screens. They are, however, easily converted into regular beaters in case the mill is put on to different grades of paper and there is no elaborate special equipment to discard.

In considering the preparation of board mill stock, it must be borne in mind that the problem is not one of long, careful beating; but rather one of breaking up and de-fibering the old papers which form by far the greater bulk of the stock used. Waste papers have already been beaten enough when they were formed into sheets of paper for the first time, and the more beating the fibers receive, the more lifeless and slow they become. While hydration of liner stock, to some extent, is desirable and necessary, it is not required or wanted for filler stock.

After furnishing a beater and beating a few minutes, some of the stock—unsized papers such as newspapers, tissue, plain chip, etc.—is ready to leave the beater. That is, in board mill circles it is considered ready for the jordans when it will pass through ¾ to 1½ inch slots or holes. Therefore, the fundamental idea in breaker beating or continuous beating with extractors, is to cause the prepared stock to leave the tub as soon as ready, allowing new stock to be added. In this way, stock which is ready does not remain in the tub for a long period and becomes overbeaten, as is the case when the waste papers are furnished direct to regular beaters, previously mentioned.

This overbeating is considerable even if the roll is left up but is excessive if the roll is kept down, as was formerly the practice. Over beating may result in several things caused by excessively slow stock, such as shut downs for lack of stock due to low beater room output, high power consumption in beating the stock, inability to make thick boards at profitable speeds, bearing troubles, broken beater shafts, high fuel consumption, etc.


WAREHOUSE.
FILLER CHIP (MIXED PAPERS). REFUSE, TAR PAPERS, ETC. SORTED OUT AT BREAKER BEATER.
FILLER NEWS. (NEWSPAPERS, ROTOGRAVURE AND COMIC SECTIONS DISCARDED AT BREAKER BEATER FOR HIGH GRADE PATENT COATED BOARD.
FILLER LONG FIBER STOCKS FOR BENDING QUALITY AND TEST AS SULPHITE, KRAFT PULP AND PAPERS, MANILAS, ETC. TO SECONDARY BEATERS.
TOP LINER (PRINTING SURFACE) WHITE ENVELOPE CLIPPINGS, SOFT WHITE SHAVINGS, WHITE BOOK WASTE, GR. NO. SULPHITE, SODA, SIZE, ALUM, CLAY, COLOR, SILICATE, ETC.
BOTTOM LINER SAME STOCK AS FILLER WHEN SINGLE LINED BOARD MADE. SAME AS TOP LINER FOR DOUBLE LINED TWO STOCK BOARD. DIFFERENT FOR DOUBLE LINED THREE STOCK.
RESERVE LINE
FRESH WATER 140°
CHIP BREAKER BEATER AND EXTRACTOR
NEWS BREAKER BEATER AND EXTRACTOR
3.0-5.0% B. DRY
3.0-5.0% B. DRY.
FILTRATE TO REUSE ON MACHINE SHOWERS.
OVERFLOW
HEAD BOX & PUMP
HEAD BOX & PUMP
FILTRATE CHEST.
EXHAUST STEAM
HEATER
RIFFLER. 0.5-1.0% B. DRY
RIFFLER 0.5-1.0% B. DRY
FILTRATE TO FILLER BEATERS AND JORDAN. FRESH WATER TO LINER BEATERS.
VACUUM DRUM THICKENER-SAVE-ALL.
VACUUM DRUM THICKENER-SAVE-ALL.
SAND FILTER
EXHAUST STEAM
FILTRATE CHEST. MACHINE WHITE WATER
CHIP CHEST. 3.0% B. DRY.
NEWS CHEST. 3.0% B. DRY.
BAFFLE BOARD
SEAL BOXES
NEWS AUXILIARY LINES CHIP
W. W. HEATER
FILLER SECONDARY BEATER.
FILLER SECONDARY BEATER
TOP LINER BEATER
BOTTOM LINER BEATER
FRESH WATER SUPPLY.
WHITE WATER CHEST.
DUMPING RACK
DUMPING RACK
DUMPING RACK
DUMPING RACK
FILLER BEATER CHEST.
TOP LINER BEATER CHEST.
BOTTOM LINER BEATER CHEST.
PUMP
(OVERFLOW)
PUMP
(OVERFLOW)
PUMP
BOARD MACHINE WHITE WATER
JORDAN RIFFLER
REGULATING RIFFLER
BOX. RIFFLER.
FILLER JORDAN
TOP LINER JORDAN.
BOTTOM LINER JORDAN
JORDAN DISCHARGE HEAD BOX.
JORDAN DISCHARGE HEAD BOX.
JORDAN DISCHARGE HEAD BOX.
FILLER MACHINE CHEST.
TOP LINER MACHINE CHEST.
BOTTOM LINER MACHINE CHEST.
FLOW DIAGRAM OF STOCK PREPARATION IN MODERN FOLDING BOX BOARD MILL. USING THREE-WAY SYSTEM.
USUAL ROUTE
POSSIBLE ROUTE

TAPPI Section, Page 254 Fig. 2

Attachments

Among these are the following:

Griley Unkle Extractor (Shartle Bros. Machine Co.)

Mitchell Extractor

Rainey Murphy Extractor

Eurich Extractor Valley Iron Works)

Bird Extractor (Noble & Wood)

Brownell Buehler Extractor

Interconnected beaters

End to end beaters

These may be divided into the following types:

1. Those in which the disintegrated stock, thrown over and to the front of the roll by centrifugal force, is extracted at the front of the beater hood.

2. Those using a revolving extractor placed in the stock in the beater tub.

3. Miscellaneous schemes.

Type 1 Extractors

The Griley Unkle extractor and Mitchell extractors are of the first type. The Griley Unkle extractor consists essentially of a beater hood perforated with holes on the front side. These are usually 1½ inches in diameter, although cleaner stock at a reduced production and with less load on the jordan fillings, are obtained with smaller holes. The stock thrown over the top of the roll, passes through these holes. The perforations quickly become plugged with refuse, lowering the output. To keep them open, they are scraped by a series of scraper blades, fitting closely to the steel hood, and free to slide in guides. These scrapers are

mounted on a rod. A crank rotated by a worm gear is connected to this rod, which is given a back and forth motion by a worm, driving the worm gear, the worm being operated from the beater roll shaft through a small belt and idler pulley. The scrapers are so spaced that the entire perforated area is covered by their movement.

Perforated hoods but without the scraper arrangement, have been used as continuous beater extractors. The continual use of a hose or hoe to keep the holes open is very troublesome; and the holes are usually only part open and have an insufficient output. The use of large and irregular amounts of water for cleaning also causes consistency variation.

A water tight box or trough, sloping on the bottom side towards the midfeather covers the perforations and scraper blades. The extracted stock and scrapings fall into this box, flowing by gravity to the end. From here, the stock is usually run to the filler beater chest through a riffler trough with vertical rods for catching the strings and rags, dropping into the chest through a dumping rack. At the high end of the box is a 2 inch cold white water connection, which ensures against the stock getting plugged in the box and riffler, and cools it off. The unprepared stock falls back into the tub in front of the roll and continues to circulate until sufficiently disintegrated.

Working on three 1500 pound beaters, three of these attachments have made 80 tons of chip in 24 hours; and on sulphite pulp in laps and sheets, one extractor will deliver 50 to 60 tons. As in any extractor attachment, the capacity is dependent on the temperature of the make-up water, on the density and circulation speed of the stock in the tub, on the frequency and thoroughness with which the tub is cleaned of refuse and on the skill of the operator. The increase in capacity, as compared with the drop method, is from 200 to 400 per cent, the saving in power is about 25 per cent. The accompanying cut shows the perforated hood, and the scraper mechanism. (Fig. 3.)

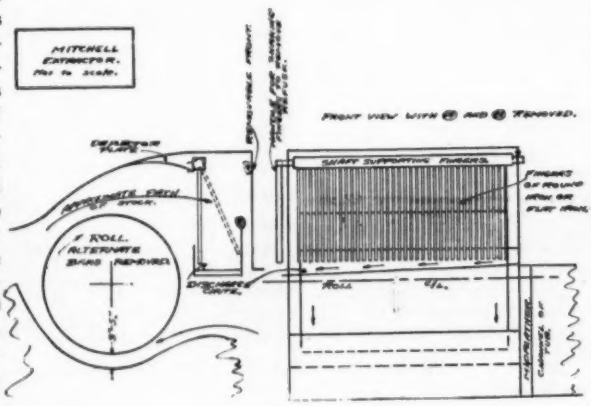


FIG. 4

The Mitchell Extractor

In the Mitchell extractor, (Fig. 4) developed by Sydney Mitchell of the United Paperboard Co., the stock is thrown by the roll through a series of vertical steel fingers in front of the beater hood. These fingers are spaced ¾ to 1½ inch to meet slots and are

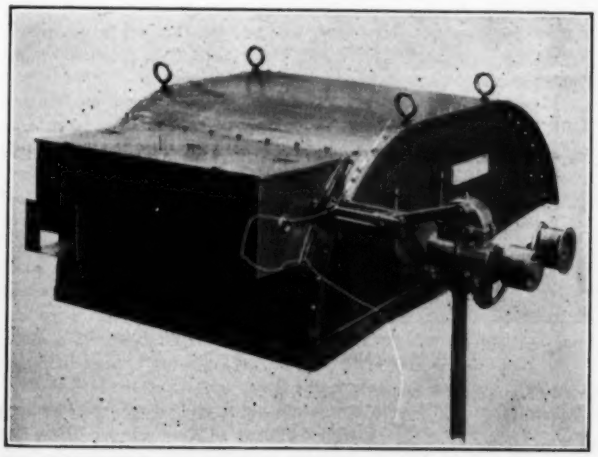


FIG. 3
Griley-Unkle Extractor

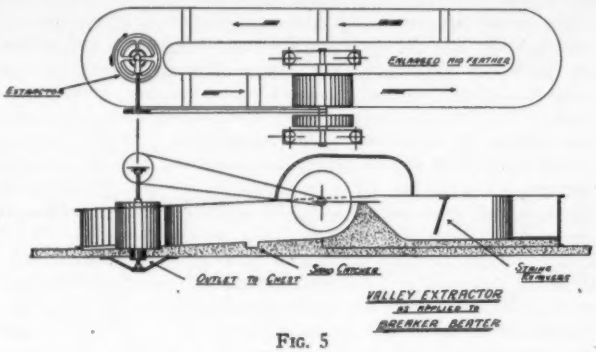


FIG. 5
Eurich Extractor

securely fastened in place at the top. The bottom ends hang free over a discharge trough similar to that in the Griley Unkle extractor. In operation, the vibration of the rods, caused by the impact of the stock is enough to loosen most of the strings, rags, etc., allowing them to fall into the discharge box. The openings are thus kept fairly clear, although they are susceptible to plugging and need regular cleaning. As in the Griley Unkle device, the stock which is still too coarse falls back in front of the roll. The extractor has a very large capacity, due to the large area of openings. For this reason, the stock is somewhat dirtier than when perforations are used to classify the stock.

All continuous beaters are, or should be, fitted with rag catchers. These are preferably operated every two hours, to obtain maximum output from the extractor. No continuous beater should be run on mixed papers longer than eight hours without ragging. To remove rags from the beater, furnishing is stopped; the stock is allowed to extract until it is quite thin and the rag catcher is lowered. Thinning the stock allows the smaller threads, etc., to become freed from undefibered masses of stock. This facilitates settling of heavy material. The rag catcher is kept lowered until several circulations of the stock have been made. It is then raised, —usually by means of a hoist driven by a 3 or 4 horsepower motor The rags are raked off on to a rack made of heavy rod or pipe, with 1 inch spacing, which is laid over the tub channel and the adhering stock is washed from the refuse.

Wherever possible, it is desirable to lower the beater roll for a few minutes before thinning the stock, to allow the rags to become cut up as much as possible. This is not possible in breaker beaters of the Shartle and Valley Iron Works type, (Fig. 5) which have no lighter bars.

To return the stock, continuously coming from the roll, back into the tub during the ragging operation with Mitchell or Griley Unkle extractors, a sliding gate is used in the discharge box. This diverts the stock back into the tub. It is also used to stop the flow to the chest whenever the stock becomes too thick or too thin, while it is being reduced by additions of stock or water and also used when shutting down the beater.

Type 2 Extractors

The second type of extractors are represented by the Rainey-Murphy, Eurich and Bird (Figs. 6 and 7).

The Rainey-Murphy extractor is designed and operates, along the lines of the common drum washer, although with a round and

not hexagonal drum. The intake openings, like the Mitchell, are slots. These are formed by pipe or rods running across the face of the drum, at right angles to the flow of the stock and parallel to the beater roll shaft. The extracted stock flows by gravity into the interior of the drum and out a hole cut in the beater wall. The drum is rotated by the beater roll shaft. The slots are difficult to keep clean. Fair results may be had by use of water at 35 to 40 pounds pressure, in a shower pipe or travelling jet type shower. The latter is preferable owing to the stock dilution caused by shower pipes. The refuse collecting in the slots is driven through the drum into the stock. Unlike the Eurich cylinder which operates submerged in stock, the Rainey-Murphy rides in the stock like a drum washer. This arrangement promotes adhesion of strings, metal, wood, etc., to the slots, upon emergence of the rods. These extractors have been made with perforated sheet metal instead of rods. When used in high speed beaters, especially with thick stock, clogging necessitates higher power consumption to turn the cylinde

The Eurich Extractor, invented by Harry Eurich of the Mac Sim Bar Paper Mills, consists of a perforated metal cylinder placed in a suitable bearing at the end of the mid feather, and rotated on its vertical axis by a bevel gear driven from the beater roll shaft by belt. (Fig. 5) As in the Mitchell and Bird extractors, the stock passes by gravity through the perforations, to the interior of the cylinder, and thence through the outlet to the chest or riffllers.

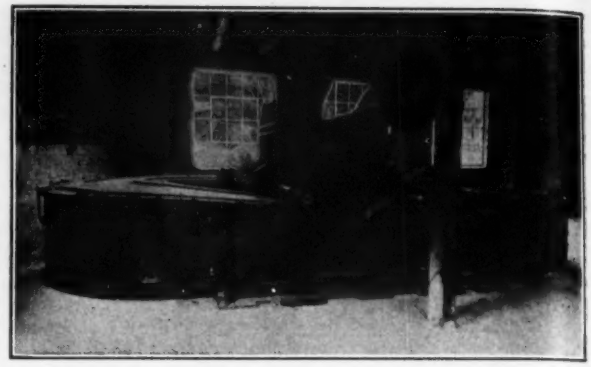


FIG. 7

Bird Continuous Beater and Extractor. (Noble & Wood Mach. Co.)

According to the inventor, when applied to a 1500 or 2000 lb beater which has a normal capacity of 5-7 tons, the extractor will deliver 80 tons per day. 3½ horsepower are required to revolve the cylinder; and a beater equipped with it, uses 100 horsepower for 120 tons output per 24 hours as compared with 200 horsepower ordinarily used. This extractor is sold in connection with a breaker beater similar to the Shartle, having a long hollow midfeather. This supports one bearing of the roll shaft,

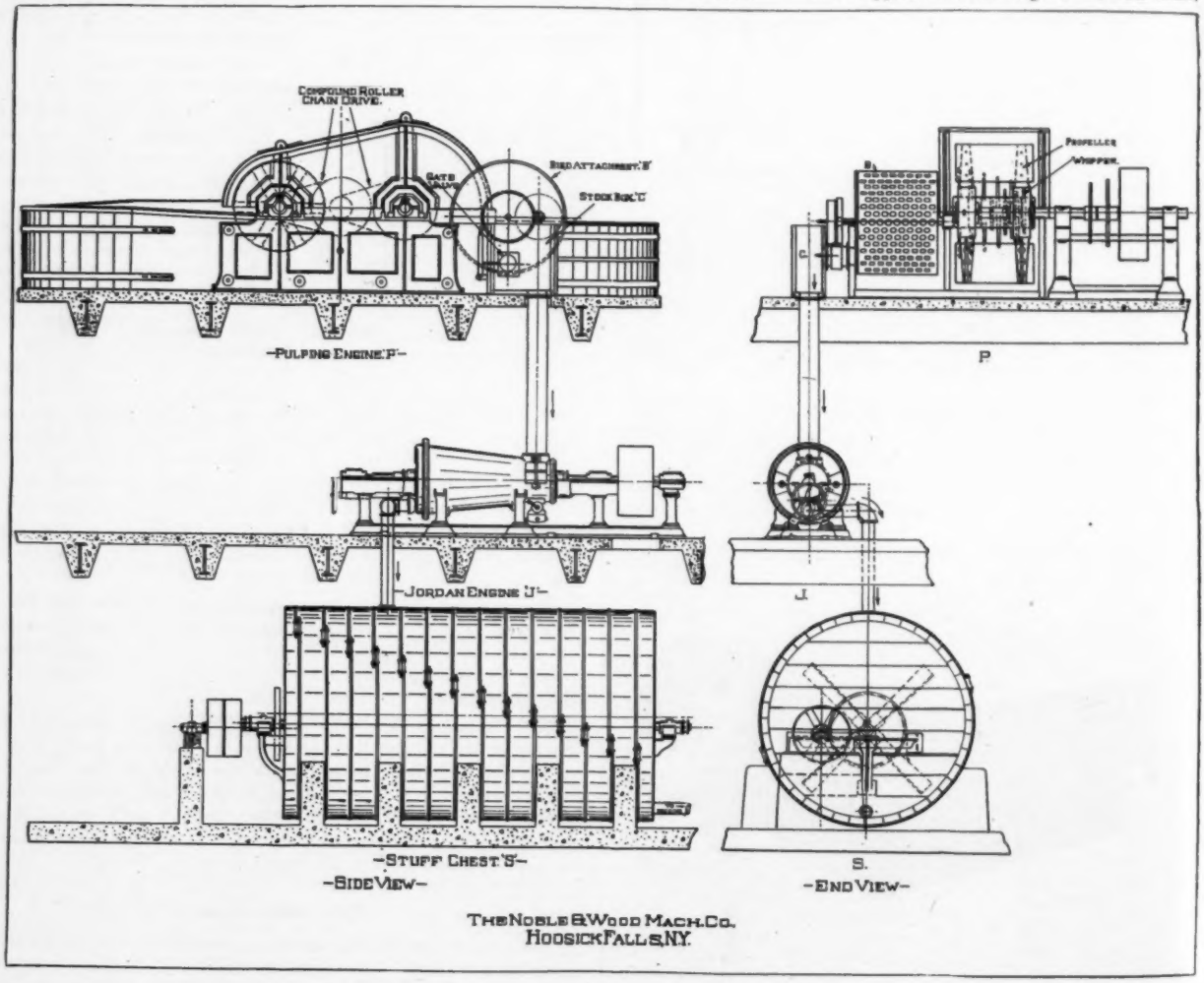


FIG. 8

A Simple and Efficient Mill Lay-out for Continuous Beating with the Paper Pulping Engine.

which is cut off and does not extend across the outer channel. A rag catcher is provided. The stock from the extractor valve or outlet, passes to the chest, or to a regulating box from which a plunger pump takes the stock to an elevated chest supplying the secondary beaters by gravity.

The continuous units are built in three sizes:

Roll size	Capacity per 24 hours
61" x 54"	75-80 tons
66" x 60"	100-110 tons
84" x 84"	200-220 tons

The extracted stock is of the same order of cleanliness as that from other extractors of the perforated cylinder type.

The Bird Extractor

The Bird Extractor is another revolving extractor placed in the stack in the beater tub channel. The construction of the pulping engine, with which this extractor is frequently sold, is shown in Fig. 6. The sketch shows the extractor installed in the engine. The plan of connecting the jordan direct to the extractor, as shown, is not to be recommended for board stock. There is too great a variation in consistency when a chest is not interposed between them; and without a chest and riffler, there is continual plugging of the jordan. Stock is furnished in front of the propeller which rotates at 18 revolutions per minute and maintains circulation. The stock is thrown by this, to the spiked whipper shown, which revolves in the opposite direction at 225 revolutions per minute. The object of the whipper is to complete the disintegration. The Bird extractor is a perforated cylinder rotating on a horizontal shaft. The drum is like the Rainey Murphy in that it occupies the width of the channel but differs from it in running under a larger submergence. The stock, extracted into the interior, passes into a regulating box thru a hole in the side of the tub. The cylinder is driven at a slow speed. Both the circumference and the midfeather end of the drum, which is covered, are perforated.

The capacity varies from 35 tons per day from a 1000 pound engine, to 70 tons from a 2000 pound beater. Considerable loss in power is experienced if there is a fast circulation, or if the stock is thick, due to accumulating and pressing against the cylinder. The power consumption is also rather high due to the high speed whipper. When used on mixed papers and dirty stock, the whipper arms soon become clogged with strings, etc, and require frequent cleaning otherwise they cannot properly break up the stock and cause increased power consumption. Pulping engines of this type do excellent work on clean stock.

Miscellaneous Types

Among the miscellaneous types of continuous beaters may be mentioned the end-to-end beater. This is an improvised tub of large capacity, and can be made from old or spare beaters. It consists of two large beaters (1500 to 2000 pounds preferably) with one round end of each removed. These are fastened together end to end into one long tub. The two beater rolls are retained and the tub can be fed from both ends if necessary. The advantages of the large tub in continuously defibering mixed papers, namely eliminating consistency fluctuations, and allowing ample room for settling and time for defibering are retained.

A beater of this type was put into service on container manilas and print manilas, supplying secondary beaters to which kraft was added for kraft liner container board filled stock. Two Rainey-Murphy extractors with one inch perforations in steel plate, were used at the start. It was found that more output could be obtained from using one extractor than from two. When using one, the stock had a chance to become disintegrated and discharged better thru the holes, because of less clogging. When two were used, the stock was thrown out too quickly and before being properly defibered, the larger size of the refuse, and undefibered papers quickly clogged the perforations.

Another system can be used where two or more beaters are available for conversion into continuous ones. A discharge box, the width of the roll, is fastened to the hood, as shown. The side of the box towards the roll, has a slot, whose width is adjustable. The bottom of the box is placed 8 inches vertically below the top of the roll. The ends of the box are placed in guides, so that its horizontal setting with reference to the roll discharge can be made when putting the system into operation. The lip shown, extending from the bottom, can be omitted if the stock is very dirty. This box discharges stock into the next beater which is equipped with a similar arrangement. The last beater in the series (four beaters are being used) has an iron standpipe leading to the riffler or chest. The stock overflows continually into this pipe, whose top is just below the normal stock level. A shower or cleaning scraper is used to keep the slots open. If the slot is too wide, it will be easier to keep clean and will discharge a larger amount of stock; but it will be coarser. The successful operation of this system depends on keeping the right ratio of water to stock in the first beater of the series, as the standpipe will plug if the stock is too thick.

Coating Paper to Get High Folding Test

SPECIAL INQUIRY No. 118

A member has sent in the following inquiry: "We are making two grades of coated folder, both of which contain some rag and ledger stock. When this stock is coated, we find that the folding test drops approximately 75 per cent, half of the drop occurring when the first side coat is applied, and the remainder when the second side is coated.

"Our equipment consists of single coaters of the return rack type, and it requires 45 minutes for the paper to travel from coater to reel. We use steam showers at the dead rack and the second side coat is applied within a few hours after the first side coat.

"1. Does the weight of coating applied affect the folding properties of the stock?

"2. What is the best temperature and humidity to maintain in the drying loft?

"3. What percentage of moisture should be retained in the sheet

(a) before coating?

(b) at the reel after coating?

"4. Does the amount of satin white used affect the folding properties of the sheet?

"5. Are there any other variables in the process, which would affect the folding endurance of the sheet?"

A copy of the report based on this inquiry will be sent to all who contribute information.

R. G. Macdonald, Sec., Tappi
18 East 41st street,
New York.

Norwegian Paper Market Dull

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 19, 1928.—Norway's mechanical groundwood market was rather dull during October, according to a report from Consul C. P. Kuykendall, Oslo, made public by the Department of Commerce.

However, certain orders have been received for the balance of the current year and for 1929 delivery. Demand for chemical pulp was somewhat brisker, frequent sales in both bleached and unbleached pulps being noted.

Prices have remained stationary. Quotations on strong sulphate have fluctuated between $2.27 and $2.40 per 100 pounds f.o.b. Norway, but contracts have been made on the basis of £11 per English ton (approximately $2.35 per 100 pounds) c.i.f. East Coast of Great Britain, for 1929 delivery.

It is understood that nearly all of the mills both in Norway and Sweden are sold out for the remainder of the year and that some have been fortunate enough to obtain orders sufficient to keep their plants in operation for the greater part of the coming year.

Quotations on bleached sulphite are approximately $3.59 and upwards, f.o.b. Norwegian port, with it is understood the demand holding good. The demand for kraft and news print papers also has been steady, orders coming in regularly. Some dissatisfaction is expressed in regard to prices, however.

Paper Board Manufacturing Problems*

By Clark C. Heritage[1]

The Technical Association of the Pulp and Paper Industry has decided to extend its Committee activities into the field of paper board manufacture and use, through the establishment of a new Committee on Paper Board. The purpose of this outline is to place before the mills and their technical staffs a statement of the field of work of the committee, and the possible projects to be undertaken, and to secure from the mills an indication of their interest and their comments on the plans thus far developed.

The paper board field is recognized as being essentially different from the paper field in the following fundamentals:

1. The requirements of the sheet for satisfactory use are usually different,
2. The sheet is thicker and heavier,
3. The sheet is usually formed of a number of webs,
4. The mechanism of the formation of a web is different, and,
5. The raw materials consist largely of waste paper of wide variety.

Because of these differences, separate consideration must be given to the problems of paper board manufacture and use.

1. The Field of Work

The general field of technical work in the manufacture of paper board may be visualized from the following plan:

USE REQUIREMENTS OF PAPER BOARD AS SOLD
(Single ply, Laminated, Corrugated, Lined, etc.)

a. Establishment of methods for evaluating the properties as required by use.

CYLINDER MACHINE OPERATION

b. Effect of cylinder machine variables on the finished sheet and their control.

STUFF

c. Establishment of methods for evaluating stuff properties as related to commercial board.

FIBER PROCESSING

d. Effect of fiber processing variables on stuff, and their control.

RAW MATERIALS

e. Establishment of methods for evaluating raw material properties as related to stuff and commercial board.

2. Fundamental Physical Properties of Single Ply Paper Board

It will be noted that the foundation of the above analysis lies in the "Use Requirements of Paper Board as Sold." All technical work should tie into this fundamental. Until these use requirements are capable of interpretation, through the determination of properties of such numerical value as to satisfy these use requirements, it is somewhat futile to attempt to exert much influence in the other fields of technical work; namely, (b) to (e).

Since the physical properties of the finished sheet as marketed appear to have so important a bearing upon their utility, a brief discussion of them may be in order at this point; physical properties may have to do with any or all of the following:

1. The test *piece* itself and dependent upon its actual dimensions,
2. The *surface* of the board and independent of actual dimensions,
3. The *structure* of the board, consisting of solids (fibers, etc.) and voids in definite arrangement, and independent of surface or actual dimensions, and,
4. The *solids* themselves (which, with the voids, make up the structure) independent of voids or actual dimensions.

The first two concern more particularly the utility of a specific board for a given purpose, while the last two concern more particularly the design of a board for a specific use.

3. Paper Board Utility

What methods are now available to determine the utility of paper board as sold?

As far as the writer is aware, methods at present in general use to determine the utility of paper board are about as follows:

a. Bursting strength. A number of instruments such as Mullen, Ashcroft, Cady and Webb. How the results actually tie into use requirements is not obvious.
b. Tensile strength. Several instruments but not known how widely used.
c. Tearing strength. One instrument but not known how widely used.
d. Pliability (bender). Two instruments but not known how widely used.
e. Effects of liquids. Cornicopia, Floating test and Penescope. The first probably most universally used.

4. Subjects to Be Investigated

What work might be done to set up new or improve existing methods for evaluating the properties of commercial board relative to its utility as consumed?

Any of the ten properties outlined in section 2 might well be the subject of investigation. The simplest ones for which to secure satisfactory standard procedures might be: Composition, density, transverse strength, effect of humidity change, effect of liquid water contact, effect of non-aqueous liquid contact, stiffness.

5. Cylinder Machine Variables

What work might be done to increase our knowledge of the effects on the sheet of the cylinder machine variables and means of controlling same?

a. Use of hand sheets to study the effect of composition, namely structure and distribution of various stocks throughout the sheet.
b. Semi-commercial cylinder machine studies along same line at Forest Products Laboratory or at those mills having small machines such that the variable can be controlled.
c. Full scale trials.

6. Stuff Preparation

What work might be done to set up or improve existing methods for evaluating the physical properties of stuff in relation to the commercial board to be produced?

This field is closely analogous to the fields of other committees so work here can be delayed.

7. Processing Variables

What work might be done to increase our knowledge of the effects on the sheet of the processing variables (beating, jordaning, milling, etc.) and means of control?

The commonest stock employed is that from mixed papers. Determine what properties may be developed and to what extent, by imposing various processing conditions.

8. Raw Materials

What work might be done to set up or improve existing methods of evaluating the quality of the fibrous raw materials in relation to the board to be produced?

Waste papers are the most important raw materials.

What are the recognized standard grades?

What are the purchase specifications for these grades?

* Outline of projects to be considered by TAPPI Committee on Paper Board.

[1] Member TAPPI, Chairman of Committee on Paper Board, Chief of Pulp and Paper Section of the U. S. Forest Products Laboratory, Madison, Wis.

How shall a shipment of waste papers be evaluated?

1. Sampling.
2. Moisture content.
3. Fiber analysis.
4. Refuse content.
5. Test development of properties by beating, milling, etc.
6. Preparation and testing of multiweb hand sheets.

9. Paper and Paper Board

Where is the paper board field essentially different from the paper field?

a. Raw materials consist largely of waste paper.
b. Larger tonnages must be handled at low cost.
c. The sheet is formed of a number of webs.
d. The sheet is thicker and heavier.
e. The use requirements are entirely different.

10. Program for Committee

Any or all of the following projects might constitute the program of work of the committee:

1. Survey of methods now available in the mills and the literature for the evaluation of physical properties in determining the utility of paper board as sold for specific uses. Standardization of these methods. This would perhaps include composition, density, certain kinds of strength, pliability, and other factors.

2. Research to establish new methods or to improve existing methods for evaluating the properties of commercial board relative to its utility as consumed. This would include the whole range of properties commercially important, involving all four entities; namely, the spiece, the surface, the structure, and the solids (fiber).

3. Survey of the present state of knowledge relative to mills and literature of the effects on the sheet, of the cylinder machine variables. This would include the effects of all machine variables from the temperature, consistence, etc., of the stock in the vat to the pressure, temperature, etc., of the rolls of the calendar stock.

4. Research to increase our knowledge of the effects on the sheet, of the cylinder machine variables. This might be done partly by means of hand sheets, partly by semi-commercial cylinder machine studies, and partly by full scale trials.

(Since the TAPPI Committee on Stuff Preparation is already functioning in the fields of establishing methods for the evaluation of the properties of stuff, and increasing our knowledge of the effects on the sheet of the processing variables—beating, jordaning, milling, etc.—these matters need not be given much consideration as this time by the Paper Board Committee.

5. Survey of methods now available, in the mills, and the literature, for evaluating the quality of various grades of waste papers in relation to the board to be produced. This might include a delineation of grades and the acceptance or rejection of existing specifications, including such matters as sampling, moisture content, refuse content, fiber composition, test development of properties by beating or milling, and the preparation and testing of multiweb-hand sheets.

6. Research to establish new methods or to improve existing methods for evaluating the quality of various grades of waste papers in relation to the board to be produced. This would develop as (5) above might indicate.

It will be noted that three of the above possible projects call for surveys and three for research, both on laboratory and mill scale. Offers of facilities for such research available for committee work are especially desirable.

Any one interested in participating in the work of the Paper Board Committee should get in touch with the writer or the Secretary of the Technical Association.

Organized Safety in Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., December 24.—An address by Fordyce P. Stanley, vice president of the Glens Falls Indemnity Company, featured a meeting of the safety committee of the New York Pulp and Paper Industries held during the past week in the Onondaga Hotel, Syracuse. The meeting was attended by pulp and paper workers from all parts of the state. The theme of Mr. Stanley's address was "Organized Safety in the Pulp and Paper Industry."

General property	Specific piece property	Specific surface property	Specific material property	Relation to use requirements as sold
Composition	Arrangement and thickness of webs	Surface coating or treatment	Fiber analysis each web	Cost, warping and bulging, and other general properties
Density	Weight per unit area and thickness	None	Weight per unit area per unit thickness	Sheetage, finish, furnish, cutting, punching, and other properties
Transverse length	Actual load at elastic limit	None	Fiber stress in lbs./sq. in. at elastic limit	Strength as a beam required in a wide variety of paper board products as ultimately consumed
	Actual load at rupture	None	Fiber stress in lbs./sq. in. at rupture	
Pliability	Actual break angle	None	Modulus of pliability	Ability to crease, score, bend, crimp, form, corrugate, and otherwise deform without surface rupture
Finish	None	Smoothness	None	Printability and appearance
Effect of humidity change	Total time for moisture content to become constant	Rate of change of moisture content	Total change in moisture content	Retention of strength, minimum change of dimensions, warping, etc.
	Total time for expansion to become constant	Rate of expansion per unit moisture content change	Per cent expansion per unit moisture content change	
Effect of liquid water contact	Total time for complete penetration or saturation	Rate of penetration	Per cent water absorption at saturation	Retention of strength, waterproofness, minimum change in dimensions, etc.
	Total time for swelling to become constant	Rate of swelling	Per cent swelling at saturation	
Effect of non-aqueous liquid contact as paraffin or ink vehicle	Surface only usually important	Rate of penetration	Surface only usually important	Liquid proofness, printability, paintability, or absorption of special liquids as paraffin
Stiffness	Deflection under unit load	None	Modulus of elasticity	Stiffness required in a wide variety of paper board products as ultimately consumed
Shearing strength	Actual load at rupture	Appearance of surface after failure	Fiber stress in lbs./sq. in. at rupture	Punching, cutting and sewing operations

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

Bleaching

Method of Bleaching Kraft Pulp. O. Kress assignor to American Lakes Paper Co. U. S. pat. 1,645,061. The pulp is first partially bleached by an oxidizing bleaching agent (e. g., bleaching powder) and bleaching is finished by means of a reducing bleach (e.g., sodium bisulphite of other sulphite). A partial bleaching may also be obtained by a reducing bleach liquor without preliminary oxidizing bleach. The oxidizing bleach is carried out with 300 to 600 pounds of bleaching powder per ton, and preferably in two stages. The reducing bleach is also preferably carried out in two stages; in the first stage the pulp at a consistency of 5 to 15 per cent is treated with 90 to 150 pounds of sodium bisulphite per ton for at least 24 hours; it is then dewatered to 30 to 55 per cent consistency on a wet machine, and during or after formation of the lap or sheet it is sprayed with 60 to 90 pounds of sodium bisulphite per ton and allowed to stand up to seven days before making into paper. The bleaching action of the bisulphite solution may be accelerated by addition of about 1 pound of zinc dust per 500 pounds of sodium bisulphite.—A.P.-C.

Apparatus for Bleaching Pulp. C. B. Thorne. U. S. pat. 1,656,765, Jan. 17, 1928. The pulp at high consistency is fed from a concentrator to an equalizing tower with a discharge outlet at the center of the bottom and a curved scraper arm which slowly rotates and discharges the pulp at a uniform rate to a mixer where it is mixed with hot water and bleach liquor and whence it passes to the bleaching tower. The latter is constructed like the equalizing tower, but the vertical central shaft carries three arms, a fairly shot straight arm at the top to distribute the pulp evenly, a curved hollow perforated arm near the center through which air is blown into the pulp, and a scraper arm at the bottom similar to the one in the equalizing tower. The pulp is discharged from the bleaching tower into a washer and from there to a low consistency bleacher of any desired known type. —A.P.-C.

Studies on Bleaching Powder. X. On the Equilibrium in the System. Ca $(CC1)_2$-$CaCl_2$-H_2O. Saburo Urano. J. Soc. Chem. Ind. Japan 30, 103-104B (May, 1928). Investigation of the equilibrium of this system at temperatures of 5, 15, 25 and 35 degrees C. showed that when calcium hypochlorite and calcium chloride in equimolecular proportions come into contact with water in amounts greater than required for saturation, several kinds of solid phases are formed according to the temperature: (a) the mixture of two single salts at a temperature above 48 degrees C., (b) calcium hypochlorite, calcium chloride and the double salt at 28 degrees C., (c) calcium hypochlorite and the double salt below 48 degrees C.; complete stability of the double salt cannot be attained between 48 and 50 degrees C.; and (d) the pure double salt below about 50 degrees C.—A.P.-C.

Studies on Bleaching Powder. V. High Test Bleach Powder. —Calcium Hypochlorite. Saburo Urano and Seichiro Imai. J. Soc. Chem. Ind. Japan 30, 125-126B (July 1927). To isolate normal calcium hypochlorite, $Ca(OC1)_2$, purer than those prepared by previously known processes, $Ca(OC1)_2$. $2Ca(OH)_2$ was used as raw material and treated as follows: (1) $Ca(OC1)_2$. $2Ca(OH)_2$ is formed from line and chlorine or bleaching liquor; (2) the basic salt is separated by filtration and washed; (3) the washed crystals are introduced into water and the insoluble $Ca(OH)_2$ filtered off; (4) the $Ca(OC1)_2$ solution being obtained free from $CaCl_2$ is evaporated in vacuo (25 to 35 mm. of mercury at 30 to 40 degrees C.) until $Ca(OC1)_2$ crystallizes out. These crystals have the composition $Ca(OC1)_2.3H_2O$, and the water of crystallization is driven off at about 60 degrees C. The dried substance is stable at 40 to 50 degrees C. At above 150 degrees C. it is decomposed into calcium chloride and oxygen, accompanied by violent explosions. It has a much fainter chlorine odor than ordinary bleaching powder. $Ca(OC1)_2$ as obtained above gives the highest test bleaching powder, containing 90 to 95 per cent available chlorine.—A.P.-C.

Studies on Bleaching Powder. VIII. The Decomposition of Calcium Hypochlorite by Carbon Dioxide. Saburo Urano. J. Soc. Chem. Ind. Japan 31, 14-15B (Jan. 1928)..

(1) Carbon dioxide decomposes $Ca(OC1)_2$ in the presence of water chiefly according to the following successive reactions:

First step $2Ca(OCl)_2 + 4H_2O = 2Ca(OH)_2 + 4HOCl$
$2Ca(OH)_2 + 2CO_2 = 2CaCO_3 + 2H_2O$
Second step $Ca(OCl)_2 + 4HOCl = Ca(ClO_3)_2 + 4HCl$
Third step $2CaCO_3 + 4HCl = 2CaCl_2 + 2H_2O + 2CO_2$

Therefore $3Ca(OCl)_2 = Ca(ClO_3)_2 + 2CaCl_2$

(2) Carbon dioxide decomposes the mixture of $Ca(OC1)_2$ and $CaCl_2$ in the presence of water chiefly according to the following successive reactions:

First step $Ca(OCl)_2 + 2H_2O = Ca(OH)_2 + 2HOCl$
$Ca(OH)_2 + CO_2 = CaCO_3 + H_2O$
Second step $CaCl_2 + 2HOCl = Ca(OH)_2 + 2Cl_2$
Third step $Ca(OH)_2 + CO_2 = CaCO_3 + H_2O$

Therefore $Ca(OCl)_2 + CaCl_2 + 2CO_2 = 2CaCO_3 + 2Cl_2$

(3) Through the formation of calcium chlorate from calcium hypochlorite or the evolution of chlorine from the mixture of calcium hypochlorite and calcium chloride is caused by heat only as previously reported, carbon dioxide accelerates these reactions because hypochlorous acid is produced from calcium hypochlorite by carbon dioxide and the hypochlorous acid produced oxidizes in turn calcium hypochlorite into calcium chlorate or oxidizes calcium chloride into calcium hydroxide and chlorine. (4) As carbon dioxide expelled almost all the chlorine from bleaching powder, Lunge assumed that the chemical constitution of bleaching powder had to be $CaCl_2O$ or $Ca(OC1)Cl$. But the present investigation shows that the mixture of calcium hypochlorite and calcium chloride also evolves all the chlorine in presence of carbon dioxide, similarly to bleaching powder. Furthermore, even calcium chloride itself gives off chlorine in presence of carbon dioxide and an oxidizing agent such as potassium permanganate. Therefore, the reaction that carbon dioxide liberates chlorine from bleaching powder is no proof of the peculiar combination of calcium hypochlorite and calcium chloride, but can be explained as the common reaction between $Ca(OC1)_2$, $CaCl_2$ and CO_2 (as Kraut supposed against Lunge) or simply as the inverse reaction of formation of bleaching powder. The chemical constitution of bleaching powder can not therefore be deduced from the action of carbon dioxide.—A.P.-C.

Bleaching Pulp. C. B. Thorne. Eng. pat. 264,596 (Oct. 21, 1925). The material is mixed with bleaching liquor so that it is moist but not free-flowing, and then treated with air or other gas while in continuous motion. An apparatus is described. —A.P.-C.

Process for Purifying Alkaline Pulp. G. A. Richter. Can. pat. 274,417 (Oct. 4, 1927). Chemical wood pulp is treated in a liquor containing bleach and an excess of caustic soda for a period of time sufficient to remove the non-alpha-cellulose constituents but insufficient to effect a substantial mercerization of the alpha-cellulose content.—A.P.-C.

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Improving Office Efficiency Through Production Standards *

By F. L. Larkin [1]

Charles M. Schwab, about a year ago, made the statement that: "Responsibility that rests upon management in guiding the destiny of mankind holds out a challenge to industrial statesmanship. Herein lies a field where expert service in enlisting interest and confidence and good will of workers becomes just as important as the study of materials." The same thought is echoed in the statement of a great industrial engineer when he said: "The greatness of a new industrial leader will lie in his ability to liberate the creative forces within man, a problem which resolves itself into one of making work fascinating as a means of releasing the desire to work."

These statements presuppose the existence in every worker of a native ability to produce efficiently. That this ability does exist in every normal being there can be no doubt but various students of the problem maintain that the portion of the maximum ability normally exhibited, ranges from 40 to 70 per cent. We are not quite as pessimistic as the advocates of the lower figure nor quite so optimistic as the adherents of the higher figure. All such estimates are based upon a few localized studies and statistics which make them unreliable but it is safe to assume that the normal production, without stimulation, falls well short of the one hundred per cent mark.

It therefore becomes the problem of industrial engineers today to develop some means of bringing to life the desire to produce at more than normal efficiency and this problem involves enormous complexities which never confront the engineers in the physical sciences. The mechanical engineer, with the necessary knowledge and skill and the necessary materials can build a machine or a motor which previously established laws and formulae state will operate to produce a given amount of product or a given amount of power—and the finished machine or motor does it. No matter how many like machines are built; no matter whether they are built and operated in Wisconsin, Rhode Island or Timbucktoo, the results are always approximately the same. On the other hand, the most carefully calculated formulae for human production, the most perfect systems of production budgeting and scheduling, if they call for continued, high efficiencies from a given average group of human beings will never get out of the theoretical stage unless in some manner the intangible, bodyless, elusive *Will To Produce* is awakened in the workers. The problem is therefore largely psychological in character since it aims at the development of a state of mind and physiological only so far as fatigue and health enter into the picture.

To achieve the desired results; to stimulate the will to produce efficiently, industrial engineering, or what is perhaps a better name, human engineering has chosen for its most successful tool the production standard linked with the various incentive wage plans, bonus plans or, as we call them, gain sharing plans. We have chosen the name "gain sharing" because the saving upon which the increment called "bonus" is dependent arises from a gain in efficiency—"mutual gain sharing" because the net divisable saving is shared equally between the company and its employes.

The particular field of endeavor with which we are concerned is the office and in any discussion of office production and the means of improving office efficiency we must deal with the fundamentals underlying all attempts to improve efficiency and principally with labor and the manner in which labor services are purchased. Some people still ask "why all this rather frantic, revolutionary talk about the methods of paying for labor services?" It is simply because competition with the necessity for lower production costs on the one hand and the sincere efforts to "humanize" industry on the other have recently disclosed the fact that in general, since time began, certainly since the birth of civilization, we have been enormously, blindly inconsistent in our purchasing policies. As far back into history as we care to go we find that most materials and commodities were bought and sold in terms of definite, unvarying units. For the protection of both the buyer and the seller, these standards have become more and more refined and more definite as civilization has advanced. Even in our own time we can all remember when the universal sales unit for eggs or bananas was the dozen, for coal the ton and for liquids, the pint quart, gallon or barrel. Because eggs and bananas vary in size, the pound is rapidly replacing the dozen so that for each unit of price a more definite measure of those commodities is received; because coal shows a wide variation in heat content, industry now grades and buys its coal on the basis of the B.t.u. content per pound, and although liquids are still measured in terms of the same old units, they are graded and priced on the basis of chemical analyses. Instead of buying pulp logs in terms of thousand feet or whatever the unit is, would your companies agree to pay a fixed price for all the logs of a crew of men could get out in a month with absolutely no guarantee as to the quantity or quality. Would you agree to

* Address given at Menasha, Wis., Nov. 16, 1928, before Wisconsin Division, Cost Association of the Paper Industry.
[1] Supervisor of Gain Sharing, the Milwaukee Electric Railway and Light Co.

pay a large sum of money for the electrical energy that a hydro-electric plant could produce in a year without any knowledge of the amount of water available or the efficiency of the plant? I don't believe you would, but many of you are still buying labor, office labor, in units of time without adjustment for the amount of useful work performed. It is certainly safe to state that advancement in the purchase of labor has not kept pace with advancements in the art of purchasing material objects, in fact labor is purchased today more blindly than in the days of slavery when the purchaser bought the body as well as the services and received something entirely tangible for his money. It is also true that the methods of compensating for office labor have lagged years behind the methods of purchasing direct productive labor.

The fact that, in general, the buying of labor services is carried on in a slip-shod manner which we would not tolerate in the purchase of commodities is still more surprising when we consider that labor is the principal element entering into any commodity we buy. A few days ago I read a statement by a high official in a great manufacturing institution in which he stated that production standards and incentives to increase labor efficiency are apt to be over-rated since the payroll, while important, is in general of smaller consequence than the cost of materials? Let us analyze that statement. It is certainly not true of office labor nor is it true in general. When we pay $4,000 for an automobile what are we buying? Aside from overhead which includes interest and profit we are paying $25.00 for raw materials and the balance for labor. We say an automobile represents so much labor, so much material and so much overhead, but the material in successive earlier stages was again made up of so much labor, so much material and overhead. The tires, for instance, took labor to manufacture and transport, and back of that the production of rubber and other materials required labor to harvest, prepare as crude products and transport. The machines which fabricate the thousands of parts had to be built by labor from unfinished materials and the same analysis can be carried on down through the successive stages of production until the final conclusion must be that aside from carrying charges on the land which produces the raw materials, the cost of manufactured articles is made up largely of labor cost.

There have, of course, grown up many attempts to regulate the compensation of labor by establishing some means of measuring output and applying incentives. Some of these attempts, hardly recognizable as such, date back hundreds if not thousands of years. The system of farming or herding "on shares" which probably had its inception in the earliest days of capitalism, the beginning of ownership of land, tools and goods was an unmistakable expression of the desire to create the will to produce abundantly. Later this system became the foundation of medieval serfdom upon which the elaborate structure of feudalism was built. The serfs cultivated the land or tended the herds of their lord and received in compensation a definite fraction of the goods produced. If they produced much they lived abundantly, if they produced little they received a scant livelihood.

In the rather recent history of factory production, various types of premium plans or bonus plans have made their appearance, beginning of course with the very simplest repetitive operations, the product of which could be easily measured in terms of tangible, material objects. Little by little, as the increasingly complicated operations of factory production have been placed on the measured basis of compensation and the value of such methods has been demonstrated, some little progress has been made in the field of office production. This progress has been very slow and the field has been largely neglected because office production is overhead and overhead is not only something to be rid of but the most difficult thing in the world to equitably apportion. In a sense, not strictly true, it is non-productive. At any rate much of it is intangible and not readily measurable; it is the most elusive phase of the world's most intangible commodity.

Standard of Production

The incentive plans mentioned are built up from production standards so as the first step toward increasing office efficiency we must establish units for measuring output, because without such standards we cannot even know our efficiency at the start. But how to express the unit of measure? The simplest, most obvious measure would be to express the cost of the office in the man-hours worked in the office in terms of the value or quantity of the product, as for example, "dollars of office expense per dollar of gross sales" or "man-hours per ton of paper produced". As a starting point for one who wishes to experiment with measuring output but who has neither the time nor facilities for making an elaborate study of the work this might not be a bad idea and such an index or series of indexes are frequently used even in companies that have built elaborate systems for measuring output scientifically. We have used them and we are still using them in conjunction with more scientific plans. Such simple standards based upon the cost of operating various groups have distinct advantages when applied to some supervisory employes but they need careful watching since they are based upon the assumption that the office expense would normally increase or decrease roughly in proportion to the selected unit whether it be dollars of gross sales, tons of paper or some other measurable factor. They also assume that the myriad other influences which might affect the ratio of office expense to output are either non-existent or compensatory.

Through the influence of the office, especially if the term is used in its broadest sense to include the sales department, planning department, etc., the ratio of office expense or office labor to sales or product might be increased, supposedly indicating a loss of efficiency, while the office efficiency is actually simultaneously increased. For example, it might be found that by increasing the office force, the factory expense for a given volume of work could be reduced through better planning, scheduling, production methods, more careful accounting or cheaper materials used to give better results. Or the additional office force might produce additional sales in proportionately less volume so that the margin of profit is reduced although the overall volume of profit is greater. In these cases we would have a condition where the office, by increasing its payroll, materially benefited the company by reducing production costs or increasing sales, but the established standard shows an increase in the ratio of office cost per unit of product or per dollar of sales, which increased ratio would result in a decreased bonus. All of these forces and many others which cannot be foreseen, for instance new and improved equipment or methods of performing work, are constantly at work in industry to upset the most carefully laid plans for measuring efficiency.

In any event such a simple index would not tell the real story except in the very simplest business set-up so we must get at some more accurate method of measurement. In the last analysis the real measure of office output or any output is the man-hours or clerk-days required by a given employe or group of employes to produce expected results under fixed conditions. Note that "results" are the requirement, not quantity of work. Although quantity is a principal factor, usually the controlling factor around which most production incentives are designed, quality is equally important and must be safeguarded. Note also that the conditions under which work is performed are fixed. Let us take the simple illustration of machine billing. An electric bill is made up of three parts, the main body of the bill, the cashiers stub and the filing stub. Certain operations such as the printing of previous and present meter readings, consumption, gross and net bill are performed on every bill. Other operations vary slightly with the type of service used by the customer, but with more than 200,000 bills per month a very good average bill can be arrived at. A fixed number of bills, correctly machined is therefore the expected result. The work

is performed by girls on the Burroughs machines which are located in well lighted, well ventilated quarters. The machine mounting, the chair, the racks for holding meter records and stacks of bills, the bill form itself and meter records are standardized. These are the fixed conditions. If any one of these things is changed by the company, the standards are no longer applicable and new standards must be established. In this particular group, the Machine Billers, there are six girls who produce more than 200,000 complete, accurate bills per month. These operators average about 1000 bills each per day which is equivalent to 200 bills per hour or about 3 1/3 bills per minute. Each bill necessitates about 35 key and motor-bar strokes which means that in addition to striking 116 keys per minute the operator must insert and remove the bill, insert and remove proof sheets, turn meter records, obtain and return stacks of bills as well as all necessary delays and personal time. The best operator averages 4 ½ bills per minute, about one bill every 13 seconds, eight hours a day, five and one half days per week. I doubt, in fact we know, that the normal production of these operators, without incentives, would not be much over half of the present production.

For the typist we are approaching the ideal when we can express her output in hours required to produce, let us say, one thousand correctly typed lines. Here again quantity and quality are of equal importance because a whole volume of typed matter, if incorrect, may be worse than useless; it may contain dangerous misinformation. Accuracy of work is controlled either by a system of cash penalties or the requirement that work be corrected or done over without credit. The work of the typist must be assumed to be correct, however, if there are no typographical errors and the work has been performed in accordance with instructions. If someone gives a typist faulty or inaccurate work for typing, it is through no fault of hers that the typed material is inaccurate; that error must show up on the other fellow's performance. We begin now to appreciate how interlaced, one operation with another, the output of one employe with that of the next in the natural sequence or cycle of production, is the matter of setting production standards.

I have said that we can express a typist's production in terms of correctly typed lines, but this is true only when the lines are of approximately the same length and the character of the work in general, is the same. Unfortunately, such a condition does not exist in our experience and the typing work of most other companies is not comparable to the bulk of typing done in our company. Due to the great volume of heterogeneous reports and tabulations peculiar to a public utility the work of various departments within the company is not comparable. We have therefore failed thus far to develop a satisfactory single plan to cover all of our typists and have had to develop special plans for small typing groups. However, where typing work can be grouped into a reasonable number of classes, a company should be able to develop satisfatory standards of production. You don't have to go all the way and establish standards with the typed line as a unit. A plan based upon the number of sheets and half sheets, single and double spaced will work satisfactorily and provide sufficient incentives. The typists work is of course relatively simple routine and as we progress to stenographers, clerks of various kinds, secretaries, accountants and superivsory employes, the problem of establishing intelligent standards becomes progressively more difficult.

About all that can be said in general of the preliminary steps to establishing production standards is that in ninety-nine per cent of the cases, the work can be measured. No industry will be more often confronted by work which apparently defies measurement, than a publicity utility. We still have some work which is not measured but we don't say that it can't be measured; we simply haven't found the best method although about eighty-five per cent of the work of more than five thousand employes is now measured by production standards.

Having determined upon a proper unit for measuring, the next step is to standardize work as far as possible. There is only one best method of doing a job if that method can be found. At least the nearest approach to the best method should be set up as standard practice.

The Setting of Standards

Determining the proper units of measure is one thing; to properly evaluate them is quite another. For example, we may say of a bookkeeper that the number of items posted per day is a satisfactory measure of the work and we have the unit. We may tear the unit down and build it up until the best practice is established and we have a standardized, fixed unit but what should the number of units per day be? Should he be able to post 500 items or 1000 items in eight hours? We will set to work and measure it. Yes, but what does that tell us? Simply that John Smith can post 600 items per day. We may measure John's work for a day or for several months and the results will be an everage, but an average of John Smith's production alone. Such an average would simply measure the effect of weather, late hours, indigestion, etc. on John's output and would be quite useless since John's output may be good, bad or indifferent. Well here is Bill Jones, we will see what Bill can do. He produces 800 items per day. Average the two and you get 700 items per day. John is below average and Bill is above but perhaps John and Bill are both below average in productiveness; perhaps the man who employed them did not exercise good judgment or did not know what to look for in bookkeepers. If this is so, it might also be true of the three or four bookeepers who work with John. How then can an accurate standard of production, the ideal standard be developed? If we could get a measure of the production of all bookkeepers in the companies who are members of a manufacturers' association for instance, or all subsidiary companies of a holding company, or still better all member companies of the broader organizations such as the American Management Association or Society of Industrial Engineers, we would have something of real value. Seven hundred or a thousand bookkeepers can not all be below average or all above average. Among them there will be good, bad and indifferent and the average of the entire group would be a reliable standard of average productivity. Such means of arriving at a fair average production are almost entirely idealistic at the present time. Because of lack of standardization in work, in the means and methods of measuring work among the few companies who have such standards, but largely because of lack of co-operation, it is next to impossible, to achieve any such results.

Today we are largely dependent upon standards derived from the study of different individuals in a group or different groups doing similar work within the company. This does not mean that the standard must be a straight unadjusted average of whatever employes are on the job at the time of the study. It should rather be the average time required by an average worker to perform the operations. If the standard should be set on the basis of the average production of unusually poor workers the standard is unfair to the company. If set on the production of only extraordinarily good workers, it is unfair to both the average worker and the good worker; it is an unfair to the company because the plan will fail to produce the desired results and the time spent on development will be wasted.

It is toward the larger goal, however, that we must strive; the goal of co-operation between companies in the establishment of standards. In the Cost Association of the Paper Industry I believe you have an excellent vehicle for carrying out a co-operative program. There are of course some factors which must be considered in any such co-operative program, factors about which we know very little. For instance it is almost bound to be true that climate will influence production and there is also a tendency for production to vary with the seasons. As

I have said we do not have any reliable data on the effect of climate and seasons in production but it is probably safe to say tnat production standards for two offices, one in Wisconsin and one in Cuba will not be strictly comparable. However, if the co-operating companies are located in approximately the same climatic belt the standards will be comparable.

The method most frequently used in developing standards for office production is the stop watch time study. Such studies must be taken with great care and the time-study man in addition to being a keen observer must be diplomatic, courteous and sympathetic. Before an operation can be standardized it must be studied by the observer to obtain the regular and special elements of the whole and to familiarize the employe with the presence of the observer through questions and discussions so that the employe will work normally during the timed observation. Normal operation can be determined by causal observation and an analysis of past production.

An employe must be made to feel at ease in order to co-operate in a time study. This feeling is brought about by the observer when he introduces questions and comments, when he selects a comfortable position in full view of the employe as well as in view of the work being performed, when he limits pencil notations to as few symbols as will serve the purpose and when he confines one period of continuous observation to two hours. It is well also to discuss with the employe the nature of the study, the reason for it, the results observed and any difficulties or apparent hardships encountered. A stop watch reading in hundredths of a minute is the most satisfactory instrument for office time studies.

Application of the Standard

Assuming that by observing the work of an individual and eliminating all avoidable waste or by averaging the production of a few or a great many employes, we have decided upon a standard. The next question is, "now that we have it, what shall we do with it?" How shall we use it to increase efficiency? In general there are two ways in which such standards can be used, first, by budgeting production on the basis of what we believe can be accomplished and second, by developing a system of "Incentive" plans.

If budgeting is decided upon as the means to an end, the problem can be boiled down to a few elements which will of course be present in varying degrees and combination in different companies. Knowing the results which can reasonably be expected from a given number of man-hours or clerk-days, the work must be changed or simplified, scheduled and systematized and supervision increased until the present employes meet the requirements or new employes are obtained who can live up to the schedule.

The second method, namely, the application of incentive plans is by far the most satisfactory and successful method, since it gets away from the "slave-driving" methods, creates the frame of mind necessary to awaken the will to work efficiently and recognizes the employe's side of the question by rewarding him in proportion to his output. The budgeting idea involves an increase in both the quantity and quality of superivsion; the incentive plan aims at a reduction of overhead supervision and the development of self-supervision. This is especially true in group plans where each worker becomes a self-appointed overseer of his fellow workers. Incentive plans exist in almost endless variety and the incentives can be roughly grouped into two classes, financial and non-financial. Non-financial incentives may take the form of vacations with pay, special privileges or prizes. Financial incentives usually take the form of promotions, cash payments or a combination of the two. The financial incentives are undoubtedly the most effective in production results. In practice the methods of making cash payments show considerable variation. Some companies pay all of the bonus in cash, some withhold a portion of it and invest the money in company securities, building and loan securities or simply deposit it to the employe's account in a savings bank. That portion which is payable in cash is distributed by some companies once a year, usually at Christmas time while others pay the cash bonus semi-annually, quarterly, monthly or even weekly. We believe that a portion of the bonus should be withheld and it is standard practice throughout our companies to apply one half of the bonus to the purchase of stock in the employee's own building and loan association. In this way an association with assets of nearly ten millions of dollars has been built up. In addition to paying good dividends to shareholders the association averages more than one new home a day for our employes and we have a working force in which more than eighty per cent of our married employes own their own homes. So far as the cash bonus is concerned, we believe that payments made less frequently than once a month make the incentives too remote and seriously impair the value of the system while payments made more frequently than once a month entail considerable additional accounting expense without adding anything to the value of the plans. In our companies we make the bonus payment once a month on a regular pay check.

An almost "unbeatable" combination of incentives is obtained by linking the cash payment and promotion features in one plan. An example of this can be found in a simple plan for punch operators in the mechanical accounting division. Most of our wage schedules have at least three classifications such as A, B and C. The differentials for clerical help usually amount to $5 or $10 per month. If a punch operator employed at the C grade is able to maintain an average bonus of six per cent on her production for a stated period of time, usually two consecutive months, she is automatically promoted to Class B. If she can maintain an average production bonus above 15 per cent she is promoted to Class A. Failure to earn the minimum bonus for her wage classification for two consecutive months brings about an automatic demotion. To indicate how such a plan operates to maintain high efficiency, we have had about 50 promotions since 1922 but it has never been necessary to demote a single employe for failure to maintain the efficiency required by the wage classification.

To illustrate the method of applying a typical gain sharing plan, a relatively simple plan covering one of the several typing groups can be used. This plan has about 40 standard operations with two standard time allowances for each operation, depending upon whether the work is done on standard or electric typewriters. In general the standards for the electric typewriters are about 10 per cent below the others. The work is largely made up of typing Ediphone letters and filling in standard form collection letters with some other miscellaneous typing. These allowances include all overhead time necessary to prepare work for typing, check, proof read, correct errors, receive stationery supplies, obtain typing instructions as well as all necessary personal time. At the end of each month the number of correctly performed operations for each typist is received from the group supervisor together with a list of penalties for improper work. Each typist's bonus is then calculated separately by extending the number of times each operation was performed by the proper standard allowance to get the total standard alowance in terms of clerk-days. From this total standard allowance the actual time spent on typing is subtracted, the result being the gross gain in clerk days. In accordance with the general rule governing all of our gain sharing plans, 20 per cent of the gross gain is set aside to offset the cost of developing, maintaining and administering gain sharing while the remaining 80 per cent is divided equally between the employe and the company. The employes share, or 40 per cent of the gross gain, is known as the net gain and is expressed in clerk days. This net gain divided by the actual time spent on the work gives us a per cent gain which in turn is applied to the employe's wage to arrive at the bonus in dollars and cents.

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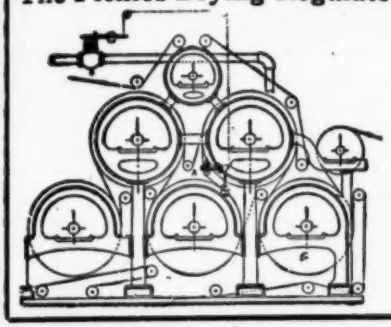

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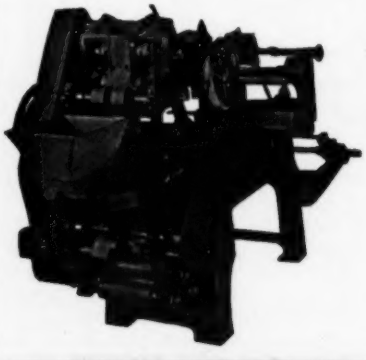

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bonus to the average typist and the plan was made effective late in 1927. In spite of the fact that the typists were experienced in their work and considered above the average in efficiency because of strict supervision, it was possible to transfer two girls to another group during the third month of the plan's operation. A third girl was transferred last month leaving a group of eight typists who are carrying, not the same load but a larger volume of work with fewer errors than the original group of eleven typists and these girls are averaging about 15 per cent bonus. Thus the company has reduced the cost of this work by the wage of three typists while paying in bonus the equivalent of 1.2 typists leaving a net reduction of 1.8 typists. A part of this net reduction of course must go to offset the costs of gain sharing. This plan also embodies the promotion incentive mentioned in connection with the Punch Operators' plan.

As an example of a more intricate gain sharing plan or series of interlaced plans, the progress of an electric service bill might be traced from the time the meter is read until the complete bill is delivered to the customer's door. This series of operations calls for strict adherence to production schedules in order that the work may flow smoothly without serious peak periods and absolute accuracy in order to avoid revenue losses on one hand and "high bill" complaints on the other hand.

In the Customer's Accounts Division there are seven large groups of employes, each with its own gain sharing plan, who assist in producing the finished electric service bill. The groups include Meter Readers, Bill Figurers, Addressograph Operators, Machine Billers, Bill Provers, Bookkeepers and Cash Listers. The work of each group is so arranged that individual employes can specialize in a few operations and no employe need learn a large number of operations. This specialization is made possible by the production of approximately 200,000 electric service bills each month.

The gain sharing standards for all operations of these groups were established by timestudy covering all operators performing the same duties. These standards are stated to the employe in such terms as "meters per day ", "bills per hour" or " cash stubs per day"; always in terms with which the employe is thoroughly familiar and which he can conveniently count for his own record. The same standards restated as "man-days per meter", "clerk-days per bill" or "clerk-days per cash stub", are used in calculating the total allowable standard time and the gross and net saving.

In the Meter Reading Division since the same men read the meters and later deliver the bills, standards in terms of meters read and bills delivered are established to recognize the varying customer density on different routes. This was necessary in order to give all meter readers an equal opportunity to earn a bonus. Class A Routes with a density of from 100 to 250 meters per mile, the allowance per meter read, including walking between meters, entering and leaving premises, is the highest. On Class B Routes with a density of from 251 to 350 meters per mile and Class C Routes with a greater density, the allowances are proportionally lower per meter. The readers are averaging about 37 per cent bonus.

When the meter book is returned to the office, the gross and net bills are figured by one group under standards which are based upon correctly figured bills while another group, at the same time, is addressographing the customer's name, address, route and customer number on blank bills under standards based upon the number of bills prepared. The Machine Billers then select the addressed bills and print on them the data taken from the meter book for the same accounts. The gain sharing standard for Machine Billers is stated in the average number of bills per day and is augmented by an additional bonus if the number of errors is kept below established standards.

The first verification of billing data is performed by the Provers, who compare the printed bills with the meter record to locate and correct errors. Accounts checked and errors corrected are the production standards for this work. After arrears, if any, merchandise and installment accounts have been added to the electric service bills mechanically, the bills are again verified by the Bookkeepers. The standards for this group cover balancing the routes, correcting the errors and completion of the work on or before the scheduled time.

As the bills are paid the cashier's stubs stamped PAID are returned to the office where they are sorted, listed and posted to office records. The number of stubs handled per day, forms the basis of gain sharing for this group.

These seven groups perform all work in connection with the monthly cycle through which all electric service accounts must pass. Auxiliary operations such as changes in records, collection of delinquent accounts, credit approval and typing are performed by other groups which have definite standards to measure their production.

Although the compensation of these employes has been gradually climbing higher until the girls at machine billing who earned $95 per month in 1923 are now averaging $126 per month and individual Meter Readers are earning as high as $205 per month, the unit cost per bill has been gradually going down. This latter figure and not the wage paid is the figure in which the management is interested.

So far as we have gone, and without intending to appear boastful, I know of no other concern who is far ahead of us. The setting of office production standards and the results achieved from their application have been very encouraging. Our efficiency in terms of increased units of output and greater quality and accuracy has undoubtedly been improved. We have developed an enthusiastic, loyal body of employes whose total compensation, including salary and bonus is usually above what they could earn elsewhere on a straight salary basis but at the same time our unit costs have gone down. It is only in such terms that the effectiveness of such standards can be expressed. As stated before, we still feel that we are in the earlier stages of such work although we are old in experience with production standards. We have yearly seen more and more interest displayed by other companies until it is no longer too fantastic to state that the old method of allowing output to be proportional to the natural bent of employes and of compensating labor on the basis of the passage of time alone are doomed. They will be replaced in the future by scientific methods and the basic element of scientific production and compensation must be the standard of production.

All this, of course, is not by way of offering anything constructive, in fact any paper of this nature, because of the variations in the work with which the listeners are concerned, must be along very general lines. I would be happy if I might be able to tell you definitely how to proceed so that each one of you, if interested, might have a complete program applicable to your work, but in our own work, after nearly fifteen years' experience with gain sharing, we still feel that we are in the earlier stages of properly setting office production standards. About the only rule one can lay down as fundamental in any business is—set up the best preliminary, tentative standards you can; make a start somewhere and then analyze, revise and improve continually. It is experimental work, research work of an exacting nature and it is costly but some day it will prove well worth while. Remember that your payroll represents the purchase price of human energy. If it were electrical energy at one cent per kilowatt-hour you would not tolerate wastefulness—human energy costs at least one cent per minute.

C. J. Bombard Goes With Union Bag

HUDSON FALLS, N. Y., December 24, 1928.—Chilton J. Bombard has resigned his business connections with the local municipal board in order to accept the superintendency of the Chicago plant of the Union Bag and Paper Company. In addition to the post as fire chief he has held responsible positions with paper mills.

For reliable running and average long life

LINDSAY FOURDRINIER WIRES

are unsurpassed

We make them for the largest and fastest machines.

Cylinder Wires All Sizes

The Lindsay Wire Weaving Co.

Collinwood Sta. CLEVELAND, OHIO

NOW!

PARIS BLACK EXTRA

in

FIBRE CONTAINERS

Our Paris Black Extra, made expressly for the paper industry, is now available in solid Fibre Containers, holding—four—12½ lb. Paper Bags. This represents 25% freight saving and convenience in storing and handling.

The HELLER & MERZ COMPANY
505 Hudson St., New York

287 Atlantic Ave. Boston
Chicago 146 W. Kinzie St.
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Philadelphia 114 Market St
Factory—NEWARK, N. J.

PARSONS & WHITTEMORE

Incorporated

299 Broadway, New York

WOODPULP

Foreign Domestic

We solicit your inquiries for

BLEACHED SULPHITE
EASYBLEACHING SULPHITE
UNBLEACHED SULPHITE
KRAFT PULP
SCANDINAVIAN GROUNDWOOD (DRY AND MOIST)
CANADIAN GROUNDWOOD
SULPHITE SCREENINGS
GROUNDWOOD SCREENINGS
BLEACHED ESPARTO PULP
BLEACHED STRAW PULP

Kalamazoo Representative
ALEX. W. MACVIE
1414 Portage St., Kalamazoo, Mich.

Where "PALCO" Packing Lifts the Friction Load Off the Shaft.

Photograph of a Centrifugal Pump Shaft badly worn by working against flax packing which did not carry sufficient lubricant to prevent friction.

CUTNO PACKING

For pumps handling caustic soda and similar chemicals. Its lubricant can be relied upon to resist the cutting action of these chemicals, and to keep the pump shaft so perfectly lubricated as to avoid friction. To prove our claims let us send you a free working sample to test under your own conditions.

GREENE, TWEED & CO.
Sole Manufacturers
109 Duane St., New York

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING DECEMBER 22, 1928

SUMMARY

Cigarette paper	298 cs.
Wall paper	112 bls., 11 cs.
Paper hangings	7 bls., 1 cs.
News print	6,465 rolls
Printing paper	75 bls., 126 cs.
Parchment paper	1 cs.
Drawing paper	12 cs.
Filter paper	10 cs.
Silk paper	6 cs.
Colored paper	56 cs.
Surface coated paper	27 cs.
Metal coated paper	27 cs.
Gold coated paper	9 cs.
Baryta coated paper	135 cs.
Wrapping paper	31 rolls, 26 cs.
Packing paper	9 bls., 19 cs.
Writing paper	7 cs.
Decalcomania paper	72 cs.
Painted paper	27 cs.
Stencil paper	80 cs.
Sulphate paper	836 rolls
Tissue paper	8 cs.
Pith paper	2 cs.
Mould paper	2 cs.
Straw board	312 rolls
Miscellaneous paper	243 cs.

CIGARETTE PAPER

De Manduit Paper Corp., Waukegan, Havre, 270 cs.
Standard Products Corp., Paris, Havre, 28 cs.

WALL PAPER

F. A. Binder, America, Bremen, 8 bls.
J. E. Bernard & Co., A. Ballin, Hamburg, 32 bls.
F. J. Emmerich, A. Ballin, Hamburg, 35 bls., 5 cs.
F. J. Emmerich, Minnekahda, London, 3 bls.
A. C. Dodman, Jr., Inc., Olympic, Southampton, 15 bls., 3 cs.
F. J. Emmerich, Calgaric, Liverpool, 10 bls., 3 cs.
J. E. Bernard & Co., Columbus, Bremen, 9 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnekahda, London, 1 cs.
A. C. Dodman, Jr., Inc., Laconia, Liverpool, 7 bls.

NEWS PRINT

Brooklyn Times, Humberarm, Cornerbrook, 755 rolls.
Standard Union, Humberarm, Cornerbrook, 393 rolls.
Courier News, Humberarm, Cornerbrook, 78 rolls.
Clinton Paper Co., Humberarm, Cornerbrook, 922 rolls.
Bank of Montreal, Humberarm, Cornerbrook, 2,714 rolls.
Perkins Goodwin & Co., America, Bremen, 648 rolls.
Parsons & Whittemore, Inc., Stuttgart, Bremen, 496 rolls.
Hudson Trading Co., Bergensfjord, Oslo, 27 rolls.
Parsons & Whittemore, Inc., Carlsholm, Kotka, 1 roll.
H. Reeve Angel & Co., Inc., Carlsholm, Kotka, 431 rolls.

PRINTING PAPER

Martin & Bechtold, America, Bremen, 12 cs.
Judson Freight Forwarding Co., Stuttgart, Bremen, 25 cs.
C. A. Redden, American Shipper, London, 16 bls.
E. Dietzgen & Co., Gaasterdyk, Rotterdam, 51 cs.
J. I. Bernitz, Victoria Maru, Hamburg, 59 bls.
Gallagher & Ascher, Pres. Harding, Bremen, 38 cs.

PARCHMENT PAPER

F. C. Strype, Caucasier, Antwerp, 1 cs.

DRAWING PAPER

International Forwarding Co., Caucasier, Antwerp, 12 cs.

FILTER PAPER

A. Giese & Son, A. Ballin, Hamburg, 1 cs.
H. Reeve Angel & Co., Inc., Minnekahda, London, 9 cs.

SILK KPAPER

Whiting & Patterson Co., Inc., Gaasterdyk, Rotterdam, 6 cs.

COLORED PAPER

Borden Riley Paper Co., Maine, Antwerp, 12 cs.
S. Gilbert, America, Bremen, 16 cs.
J. Beckhard, America, Bremen, 6 cs.
J. J. Shore, America, Bremen, 10 cs.
Universal Car Loading Co., Stuttgart, Bremen, 7 cs.
S. Gilbert, Columbus, Bremen, 5 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Maine, Antwerp, 27 cs.

METAL COATED PAPER

Hensel, Bruckman & Lorbacher, America, Bremen, 7 cs.
Hensel, Bruckman & Lorbacher, Columbus, Bremen, 20 cs.

GOLD COATED PAPER

F. Murray Hill, America, Bremen, 4 cs.
F. Murray Hill, Columbus, Bremen, 5 cs.

BARYTA COATED PAPER

Globe Shipping Co., Columbus, Bremen, 34 cs.
J. H. Schroeder Banking Corp., Columbus, Bremen, 101 cs.

WRAPPING PAPER

Steffens Jones Co., Maine, Antwerp, 7 cs.
Birn & Wachenheim, Maine, Antwerp, 19 cs.
Fidelity Trust Co., Stuttgart, Bremen, 31 rolls.

PACKING PAPER

Haule Wax Paper Manfg. Co., A. Ballin, Hamburg, 19 cs.
National Consumers Paper Corp., Gaasterdyk, Rotterdam, 9 bls.

WRITING PAPER

Globe Shipping Co., Paris, Havre, 5 cs.
MacHattie & Green, Paris, Havre, 1 cs.
Stern Bros., Olympic, Southampton, 1 cs.

DECALCOMANIA PAPER

L. A. Consmiller, Stuttgart, Bremen, 6 cs.
C. W. Sellers, A. Ballin, Hamburg, 24 cs.
C. W. Sellers, Columbus, Bremen, 21 cs.
B. F. Drakenfeld & Co., Laconia, Liverpool, 21 cs. (duplex).

NOTE PAPER

H. Reeve Angel & Co., Inc., Minnekahda, London, 1 cs.

PAINTED PAPER

American Exchange Irving Trust Co., Rochambeau, Havre, 27 cs.

STAINED PAPER

Japan Paper Co., Victoria Maru, Hamburg, 1 cs.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., A. Ballin, Hamburg, 80 cs.

SULPHATE PAPER

Insight Paper Co., Bergensfjord, Oslo, 836 rolls.

TISSUE PAPER

G. W. Sheldon & Co., American Shipper, London, 3 cs.
B. F. Drakenfeld & Co., Laconia, Liverpool, 5 cs.

PITH PAPER

Nosawa & Co., Argun Maru, Keelung, 2 cs.

MOULD PAPER

Phoenix Shipping Co., Gaasterdyk, Rotterdam, 2 cs.

STRAW BOARD

Haas Bros., Gaasterdyk, Rotterdam, 52 rolls.
Perkins Goodwin & Co., Gaasterdyk, Rotterdam, 158 rolls.
A. Vuyk, Gaasterdyk, Rotterdam, 102 rolls.

MISCELLANEOUS PAPER

M. J. Corbett & Co., Rochambeau, Havre, 6 cs.
Standard Products Corp., Rochambeau, Havre, 98 cs.
Standard Products Corp., Paris, Havre, 98 cs.
Guibout Freres, Paris, Havre, 4 cs.
American Express Co., Stuttgart, Bremen, 30 cs.
Y. Yabuki, Argun Maru, Kobe, 7 cs.

RAGS, BAGGINGS, ETC.

Interstate Trust Co., Sinaia, Alexandria, 247 bls. rags.
Brown Bros. & Co., Caucasier, Antwerp, 23 bls. rags.
Chase National Bank, Caucasier, Antwerp, 29 bls. flax waste.
Railway Supply & Manfg. Co., Caucasier, Antwerp, 113 bls. rags.
W. Schall & Co., Caucasier, Antwerp, 175 bls. bagging.
State Bank & Trust Co., Caucasier, Antwerp, 20 bls. rags.
W. Schall & Co., Waukegan, Havre, 77 bls. bagging.
V. Galaup, Waukegan, Havre, 81 bls. rags.
E. J. Keller Co., Inc., Aden Maru, ——, 166 bls. rags.
E. J. Keller Co., Inc., Aden Maru, ——, 13 bls. bagging.
W. Steck & Co., Waukegan, Havre, 165 bls. jute waste.
1st National Bank of Boston, Exchange, Barcelona, 160 bls. cotton waste.
French American Banking Corp., Exhibitor, Genoa, 79 bls. rags.
French American Banking Corp., Exhibitor, Leghorn, 59 bls. rags.
American Exchange Irving Trust Co., America, Bremen, 109 bls. cotton waste.
W. Schall & Co., America, Bremen, 94 bls. cotton waste.
National Park Bank, America, Bremen, 65 bls. cotton waste.
E. J. Keller Co., Inc., Litunia, ——, 179 bls. rags.
E. J. Keller Co., Inc., Litunia, ——, 105 bls. bagging.
B. D. Kaplan, Western Ally, Antwerp, 5 bls. rags.
E. Mayer, Western Ally, Antwerp, 19 bls. rags.
A. W. Fenton, Inc., Western Ally, Antwerp, 16 bls. rags.
E. J. Keller Co., Inc., Western Ally, ——, 250 bls. flax waste.
Brown Bros. & Co., American Shipper, London, 57 bls. rags.
J. Cohen & Son, Aurania, Southampton, 76 bls. rags.
American Exchange Irving Trust Co., Gaasterdyk, Rotterdam, 21 bls. bagging.
American Exchange Irving Trust Co., Gaasterdyk, Rotterdam, 175 bls. cotton waste.
J. Cohen & Son, Calgaric, Liverpool, 15 bls. paper stock.
American Express Co., Victoria Maru, Hamburg, 67 bls. rags.
Interstate Trust Co., Victoria Maru, Hamburg, 45 bls. rags.
R. Canovai Figli, Pres. Wilson, Trieste, 20 bls. rags.
Bank of The Manhattan Co., Pres. Harding, Bremen, 11 bls. rags.
Whaling Waste Products Co., Pres. Harding, Bremen, 104 bls. bagging.
National City Bank, Coahoma County, Rotterdam, 16 bls. rags.
Castle & Overton, Inc., Coahoma County, Rotterdam, 21 bls. rags.

OLD ROPE

Brown Bros. & Co., Waukegan, Havre, 107 rolls.
Brown Bros. & Co., Bristol City, Bristol, 122 coils.
Brown Bros. & Co., Maine, Antwerp, 67 coils.
Brown Bros. & Co., Exchester, Genoa, 185 coils.
Brown Bros. & Co., Alfonso XIII, Coruna, 30 coils.
Brown Bros. & Co., Gaasterdyk, Rotterdam, 63 coils.
W. Steck & Co., Gaasterdyk, Rotterdam, 128 coils.
American Exchange Irving Trust Co., Gaasterdyk, Rotterdam, 5 coils, 35 bls.
R. Canovai Figli, Pres. Wilson, Trieste, 87 rolls.

CHINA CLAY

National City Bank, Bristol City, Bristol, 390 bags.
C. T. Wilson & Co., Bristol City, Bristol, 25 casks.

CASEIN

Atterbury Bros., Inc., American Legion, Buenos Aires, 1,418 bags.

WOOD PULP

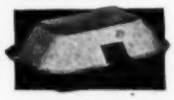
O. E. Kiaer, Topeka, Greaker, 625 bls. sulphite.
J. Andersen & Co., Topeka, Greaker, 1,250 bls. sulphite.
E. J. Keller Co., Inc., Bergensfjord, ——, 725 bls. wood pulp.
Atterbury Bros., Inc., Bergensfjord, Oslo, 1,250 bls. wood pulp.
E. M. Sergeant & Co., Bergensfjord, Oslo, 320 bls. wood pulp.
Chemical National Bank, Bergensfjord, Oslo, 150 bls. sulphite.
Castle & Overton, Inc., Gaasterdyk, Rotterdam, 540 bls. wood pulp.
Agasote Millboard Co. (Trenton), New Northland, Weeds Island, N. F., 634 rolls wood pulp.

(Continued on page 60)

A better dish at a lower price

PAPRUS DISHES are one-piece—rigid as wood—cost less than paper! *Moulded* from pulp without folds or staples. Sterilized. Waterproof. Leakproof. These strong selling points help salesmen sell more Paprus dishes to grocers, butchers and delicatessen stores. You can increase your business with Paprus Dishes. Write for prices.

Paprus Dishes used as covered container



PAPRUS DISHES

KEYES FIBRE COMPANY, INC.

General Sales Offices: GRAYBAR BLDG., NEW YORK

Factory: Waterville, Maine JOHN M. HART COMPANY INC., *Manager of Sales*

SKID-EM-ON TRUCKS

Now you can avoid all danger of damage to men or merchandise when paper rolls are handled with SKID-EM-ON trucks. Made in two types. END LOADER for Short Rolls where aisles and doorways are amply wide. SIDE LOADER for Long Rolls in close quarters, narrow aisles and doorways. 30 Days Free trial. It not satisfied, we pay return freight. State diameter, length and weight of largest rolls you wish to handle and which style truck you prefer—END LOADER or SIDE LOADER. Order one today.

CENTRAL MACHINE WORKS

437 SOUTH SENATE AVE. INDIANAPOLIS, IND.

BROWN COMPANY'S ALPHA GRADES

of Purified Cellulose Fibre representing some of the valuable results of our many years of research in cellulose chemistry.

SUPER ALPHA

for strength in Tear, Fold and Mullen. Super Alpha equals the higher grades of rags in the manufacture of fine papers.

EASY-BEATING ALPHA

This is a grade developed for mills of limited beating capacity. While not giving results equal to Super Alpha, it produces wonderful paper on short beating.

REGULAR ALPHA

This is a grade midway between Super and Easy-Beating.

Use ALPHA for Quality

BROWN COMPANY FOUNDED 1852 *Portland, Maine*

ENGINEERS

Power plants—additions—complete paper mill projects

ONE great organization—a specialist in paper mill engineering and construction—designs, builds, rebuilds, reports, appraises, for many of the most important concerns in the paper industry. Plans, price, construction work, delivery date, owner's satisfaction, all guaranteed.

Ferguson customers include:

Hinde & Dauch Co. — Spencer-Wyanne Paper Products Company
A. P. W. Paper Co. — Bennington Wax Paper Company
Hood Paper and Paper Co. — Oswego Falls Corp.
Chillicothe Paper Co. — Fairfield Paper Co.
Warren Mfg. Co.

THE H. K. FERGUSON COMPANY

Hanna Bldg. • Cleveland, Ohio • Phone: CHerry [illegible]

New York • Detroit • Birmingham • Tokio, Jap—

Ferguson ENGINEERS

Imports of Paper and Paper Stock

(*Continued from page 58*)

PHILADELPHIA IMPORTS

WEEK ENDING DECEMBER 22, 1928

Old Colony Trust Co., Bristol City, Bristol, 149 coils old rope.

J. A. Steer & Co., Bristol City, Bristol, 247 bls. waste paper.

Anglo South American Trust Co., Exchange, Valencia, 208 bls. rags.

Bank of N. Y. & Trust Co., Exchange, Valencia, 252 bls. rags.

Lang Co., Exhibitor, Leghorn, 84 bls. rags.

MacBlaine & Co., Exchester, Marseilles, 80 bls. cotton waste.

E. Butterworth & Co., Inc., Explorer, Alexandria, 153 bls. rags.

Equitable Trust Co., Western Ally, Antwerp, 134 bls. rags.

Castle & Overton, Inc., Western Ally, Antwerp, 133 bls. rags.

G. Mathes & Co., Western Ally, Antwerp, 90 bls. rags.

Standard Waste Co., Western Ally, Antwerp, 50 bls. rags.

National Waste Co., Western Ally, Antwerp, 20 bls. rags.

P. Corr & Son, Western Ally, Antwerp, 48 bls. rags.

Wallworth & Son, Western Ally, Antwerp, 25 bls. rags.

Chemical National Bank, Western Ally, Antwerp, 67 bls. rags.

E. J. Keller Co., Inc., Lorain, ——, 144 bls. rags.

E. J. Keller Co., Inc., Burgerdyk, ——, 177 bls. rags.

E. J. Keller Co., Inc., Sac City, ——, 108 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING DECEMBER 22, 1928

Congoleum Nairn Co., Waukegan, Havre, 451 bls. rags.

Leshner Paperstock Co., Waukegan, Havre, 397 bls. bagging.

Leshner Paperstock Co., Waukegan, Dunkirk, 189 bls. rags.

Congoleum Nairn Co., Waukegan, Dunkirk, 485 bls. rags.

Congoleum Nairn Co., Exhibitor, Naples, 186 bls. rags.

Congoleum Nairn Co., Exchester, Leghorn, 190 bls. rags.

National City Bank, Exchester, Genoa, 449 bls. rags.

National City Bank, Exchester, Savona, 108 bls. rags.

Parsons & Whittemore, Inc., Topeka, Oslo, 450 bls. wood pulp.

Atterbury & McKelvey, Topeka, Tofte, 5,100 bls. sulphite.

O. E. Kiaer, Topeka, Greaker, 750 bls. sulphite.

Baltimore News & American, Topeka, Trosvik, 1,359 rolls news print.

Congoleum Nairn Co., Mercer, Antwerp, 2,646 bls. rags.

Congoleum Nairn Co., Mercer, Antwerp, 315 bls. bagging.

S. Shapira & Son, Mercer, Antwerp, 69 bls. rags.

E. J. Keller Co., Inc., Lorain, ——, 651 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING DECEMBER 22, 1928

Bank of Montreal, Humberarm, Cornerbrook, 5,680 rolls news print.

E. Butterworth & Co., Inc., Mercer, Antwerp, 105 bls. bagging.

BOSTON IMPORTS

WEEK ENDING DECEMBER 22, 1928

Sherwin Sheppard Co., Western Ally, Antwerp, 21 bls. rags.

Katzenstein & Keene, Inc., Western Ally, Antwerp, 244 bls. rags.

S. Godfrey, Western Ally, Antwerp, 24 bls. rags.

E. Butterworth & Co., Inc., Western Ally, Antwerp, 63 bls. bagging.

E. Butterworth & Co., Inc., Western Ally, Antwerp, 227 pkgs. old pickers.

E. Butterworth & Co., Inc., Western Ally, Antwerp, 280 bls. flax waste.

International Purchasing Co., Western Ally, Antwerp, 32 bls. bagging.

Meredith Linen Mills, Western Ally, Antwerp, 155 bls. flax waste.

Oxford University Press, Laconia, Liverpool, 5 cs. printing paper.

NEW ORLEANS IMPORTS

WEEK ENDING DECEMBER 22, 1928

Johanson, Wales & Sparre, Inc., Topeka, Gothenburg, 275 bls. sulphite.

International Accep. Bank, Topeka, Oslo, 800 bls. sulphate.

E. J. Keller Co., Inc., Hudson, ——, 473 bls. flax waste.

Elected Treasurer of American Writing

HOLYOKE, Mass., December 24, 1928.—William J. Norton, 33, was elected treasurer of the American Writing Paper Company, Inc., a ta meeting of the directors held at New York City last week, succeeding the late L. S. Nold who died at Atlantic City a few weeks ago. Mr. Norton is the youngest executive to hold the position of treasurer in the history of the company.

He was born in Holyoke and educated here entering the company's employ after graduating from the Holyoke High School. He was first connected with the advertising department where his industry and ability soon gained recognition and he was made assistant advertising manager. He was then promoted to the sales department in charge of papeterie developments and exports and from there went to the administration department, being made assistant secretary of the company and secretary to President S. L. Willson. He is married and lives at 10 Princeton street; and is an active member of the Mt. Tom Golf Club, Holyoke Lodge of Elks and Kiwanis Club.

L. C. Reynolds, who has been assistant to the president, was made comptroller, and James A. Reilly, who has been head of the Cost Department, was made assistant to Mr. Reynolds; and Antonio Goddu made assistant treasurer.

Boston Paper Market Fairly Active

BOSTON, Mass., December 24, 1928.—A holiday market prevails in this paper center, although for the time of year the volume of orders for fine stock is fairly satisfactory. A number of the trade expect a quiet market until after the first of the year. Prices of fine paper continue steady.

A cut of $5 a ton in No. 2 kraft has not been the Christmas present which some sellers would like to receive and has upset the market to a considerable extent, according to statements of dealers here. Members of the trade received announcment of the cut on December 20. It is understood that word came from Southern mills, and that some sales have been going at the lower figures for about a week. Business in kraft has been rather slow generally during the closing weeks of the year.

The box board price situation is generally unaltered. At one office it was stated that there was no price on chip board from at least most of the mills, although one manufacturer is taking orders at the cut price. Little new business is coming in now, according to reports, but the mills are operating busily on orders previously received. It is expected that, contrary to custom, mills will run this week.

Old papers have been rather quiet, as usual in the last days of the year, about the same as the previous week. The trade looks forward to the same condition for the rest of December, but to an improvement with the advent of 1929. Prices, however, are fairly steady, except that over-issue news has dropped to .70 to .85 from a former range of .85 to .90, on account of the slack market. Bagging and rags are also rather slow.

New Paper Bag Plant for East Pepperell

The Cornell Multi Wall Valve Bag Company is a new concern organized by J. E. Cornell, Sr., former president of the Bates Valve Bag Company of Chicago. J. E. Cornell, Jr., is vice president. H. B. Lanum, former treasurer of the Bates Valve Bag Company, is treasurer of the new company. Lyle Harper of Chicago is secretary.

The new company will manufacture an entirely new and improved type of paper multi wal lvalve cement sacks. A new modern brick and cement plant is now well under construction at Pepperell, Mass., adjoining the property of the Nashua River Paper Company, and will be completed by January 1, and the company expect to be operating in their new quarters during February.

The paper used in this new type bag will be the well known Primus Kraft, manufactured by the Nashua River Paper Company, at East Pepperell, Massachusetts. The Nashua River Paper Company's new 156 inch Fourdrinier paper machine will be in operation in March.

THE

"TRIMBEY-SHEVLIN"

A NEW PULP—

Screens 80 to 100 Tons Ground Wood per Day

Consistency—Screened Stock 0.8% to 1% Air-Dry

Requires only 25 to 30 Horse Power

Employs Only One-Half Usual Number of Deckers

Entirely Self-Cleaning

No Showers, No Thinning Water, No Wash Water.

A Pulp Screen Which is a Worthy Companion to The Trimbey Automatic Consistency Regulator and The Trimbey and Tibbitts Proportioning and Metering System

Ask Us

TRIMBEY MACHINE WORKS

Glens Falls, N. Y.

Made in Canada? Yes.

Operating Advantages

of

Quartz Quality Size

Any one or all of these advantages of Quartz Quality Silicate Size would pay you to look into its use in your mill:

1. Good formation of the sheet and satisfactory removal of water by suction.
2. No sticking on the press rolls.
3. As a result of the above, increased life of the felts.
4. Quick and complete sedimentation of the white waters.
5. Increased retention of filling materials without sacrifice of strength.
6. Economy in coloring.

Ask us for more information. No obligation.

Philadelphia Quartz Company

General Offices: Philadelphia

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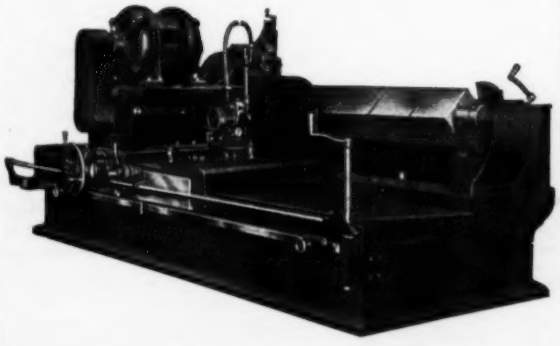
This Hanchett Knife Grinder will sharpen your knives better.



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Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power & Paper 5s, 1943	90	91
Abitibi Power & Paper 6s, serially to 1934	100	102
American Writing Paper 6s, 1947	81	87
Bastrop Pulp & Paper 6½s, 1940	103	105½
Bedford Pulp & Paper 6½s, 1942	97	100
Beigo-Canadian Paper 6s, 1943	100	103
British-Columbia Pulp & Paper 6s, 1950	89	92
Brown Paper Mills Serial 6s, 1941	97	100
Brown Company 5½s, 1946	98	101
Bryant Paper 6s, 1942	98	101½
Canadian Paper Board 7s, 19337	97	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1929	95	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago, Debenture 6s, 1936	95	98
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	78	...
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	95	...
Champion Paper Corp. 6s, 1945	95	98
Container Corp. of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	90	99
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	101	102
Dells Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	80	...
Donnaconna Paper 5½s, 1948	93	...
Eastern Manufacturing Co. 7s, 1938	97	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Irange Paper 7s, 1942	101	...
Fort William Paper 6s, 1946	100	104
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	100	...
Hawley Pulp & Lumber 6s, 1946	96	...
Hawthorne Paper Company 6s, 1937	80	...
Hoberg Paper & Fibre 7s, 1937	94	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
Itasca Paper & Prairie River Power Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Power Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	83	90
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Paper 6s, 1941	105	108
Marathon Paper Mills Serial 5½s, 1942	99	101
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	97	101
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper Serial 6½s, 1947	102	105
Munissing Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1928-42	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Orono Pulp & Paper 5s, 1941	96½	...
Oswego Falls Corp. 6s, 1941	99	102
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Paper 6s, 1938	101	103
Penobscot Chemical Fibre 6s, 1942	102	105
Port Alfred Pulp & Paper 5½s, 1947	98	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Queen City Paper 7s, 1933	98	...
River Raisin Paper 6s, 1936	98	100
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	102
St. Maurice Valley Corp. 6s, 1945	101	104
St. Maurice Valley Corp. 5½s, 1947	98½	100½
St. Regis Paper of Canada 6s,, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	102
Smith (Howard) Paper Mills 7s, 1941	104	106
Spanish River Pulp & Paper 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	96
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1934	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	102	...
Waterway Paper Products 6s, 1931	100	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parson Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9¼	10¼
American Box Board, Com.	9¼	10¼
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P. Pfd.	65	75
Brompton Pulp & Paper, 8% Pfd.	100	...
Champion Fibre, 7% Pfd.	108	110
Diem & Wing, 7% Pfd.	92	97
Eastern Mfg. Co. 1st Pfd.	55	...
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	100	...
Hinde & Dauch, Com.	125	None Off.
Hinde & Dauch, 6% Pfd.	102	None Off.
Holyoke Card & Paper	160	None Off.
Marathon Paper Mills, Com.	150	...
Mengel Co., Pfd.	102	104
Midwest Box Co., 8% Pfd.	98	102
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers, Com.	195	...
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.	80	...
Richardson Co., Com.	170	...
Sabin Robbins Paper Co., 8% Pfd.	105	110
St. Croix Paper	155	...
St. Regis Paper Co., 7% Cum. Pfd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None Off
West Virginia Pulp and Paper Company	55	57
West Virginia Pulp and Paper, Pfd.	100	103
Whittaker Paper, 7% Cum. Pfd.	105	None Off

CONTRACT PRICES NOT YET DECIDED

(*Continued from page 15*)

will have a combined capacity of 145 billion cubic feet, or one and two-thirds times that of the reservoir created by the famous Assouan dam on the Nile River in Egypt.

Located in the heart of one of the great timberland areas of Canadian International Paper Company, the Cabonga dam will be forty-six miles above the Mercier dam and will form a reservoir of 45 billion cubic feet capacity, draining a territory of 1,150 square miles. The new reservoir will materially assist the Mercier reservoir in regulating the flow of the Gatineau River on which Gatineau Power Company has completed three hydro-electric plants within the past two years.

Two of these stations are within six miles of the City of Ottawa, and have a combined designed capacity of 290,000 horsepower, of which 232,000 horsepower is installed and in the process of installation. The third station, the Paugan plant—thirty-five miles north of Ottawa—has an installed capacity of 204,000 horsepower, and came into operation on October 1 when it commenced delivery of 80,000 horsepower to the Hydro-Electric Power Commission of Ontario. This power is being distributed by the Commission in the Toronto area to supplement the power now supplied from Niagara Falls and is being delivered by Gatineau Power Company under a thirty-year contract, the quantity increasing annually to a maximum of 260,000 horsepower on October 1, 1931, which rate is continued throughout the life of the contract.

Progress in hydro-electric development in Canada has been particularly rapid lately as a result of expanding industrial activities.

Abitibi's New Appointments

The directors of the Abitibi Power and Paper Company announce that George R. Gray, manager of the mills of the former Spanish River Pulp and Paper Mills, Ltd., of Sault Ste. Marie, Ont., has been elected a vice-president of the company. C. C. Irvine, manager of Manitoba Paper Co., one of the wholly-owned subsidiaries of Abitibi, has been elected a director and vice-president of Manitoba Paper Company.

C. H. Eddy Leases Eddy Co.

Charles H. Millen, general superintendent of the E. B. Eddy Company, at Hull, Que., has resigned, on account of ill-health, after nearly forty years in the employ of the company. He is 60 years old and is a son of the late George Millen, who was president of the company at the time of his death.

Laurentide Deal Approves

At a special meeting of the shareholders of the Laurentide Power Company in Montreal, the offer of the Shawinigan Water and Power Company to purchase the entire assets of the company was formally accepted. Laurentide Power shareholders have two alternative offers open to them, one providing for a cash payment of $227.22 per share, and the other for $151.67½ per share in cash and 1 1/10 share of Shawinigan Water and Power Company stock. Shareholders have until December 28 to deposit their certificates for exchange on whichever basis they choose.

The deal is important to Shawinigan because it gives that company power control of the St. Maurice River below the Laurentide development and virtual power control of the entire river, owing to rights recently secured on the upper part of the river. The Laurentide plant is capable, moreover, of considerable expansion.

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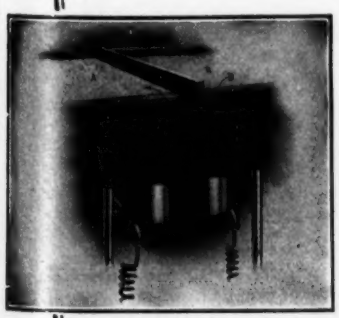

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, December 26, 1928.

Trading in the local paper market was only moderately active during the past week, due mainly to the curtailment of trading on account of the Yuletide holiday season. Practically all grades of paper, however, had enjoyed a heavy demand during the last quarter. Sales forces of the leading paper organizations are looking forward to the forthcoming year with every confidence.

The news print situation is still obscured and the leading executives of the industry have not yet come to an agreement regarding the contract price for 1929. Production in North America has been running at approximately 85 per cent of capacity, while consumption of late has been about normal for the season of the year.

Conditions in the paper board market are practically unchanged. Quotations on chip and news are still weak but other grades are holding to schedule. The fine paper market is somewhat quieter. Prices, however, remain fairly steady. The coarse paper market is rather spotty and there has been another reduction in the price of southern kraft. Wrapping paper is still moving at a satisfactory pace.

Mechanical Pulp

The ground wood market was decidedly quiet during the past week, due in all probability to the inventory period. Shipments against standing contracts, however, have been moving fairly regularly. There are a number of inquiries in the market for future business and the future outlook is promising. Prices are practically unchanged and shading is infrequent.

Chemical Pulp

Most of the business transacted in the chemical pulp market during the past week was along routine lines and manufacturers are evidently awaiting the turn of the year before replenishing their stocks. Shipments against contract are going forward in normal volume for the season. Prices generally remain steady to firm.

Old Rope and Bagging

The old rope and bagging market is practically unchanged. Both imported and domestic grades of manila rope continue in excellent request. Prices are holding to former levels. The demand for bagging is mostly seasonal and not much improvement is anticipated until the end of the holidays and the inventory period. Prices generally remain unaltered.

Rags

No radical changes were recorded in the local rag market during the past week. Domestic roofing rags are arousing some interest among consumers but the demand for cotton grades has fallen off slightly. The foreign rag market is practically unchanged with dealers abroad still having firm views regarding quotations on the different grades.

Waste Paper

The paper stock market is exhibiting a strong undertone, although the business transacted during the past week was light, due to the holidays and other contributing causes. Perhaps the feature of the market was the strength of container manilas which are now quoted at from .65 to .70. Quotations on all other grades remain unaltered and there is not much talk of concessions now.

Twine

According to reliable authorities on the industry, the twine market has experienced an excellent fourth quarter of the year. As is usual at this season, demand for the various grades of twine is falling off temporarily and some close observers look for a slight revision of the prices in the near future.

E. H. Gilman Leaves Bryant Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., December 24, 1928.—The announcement that E. H. Gilman, general superintendent of the Bryant Paper Company for the past 21 years, has resigned his position to accept a similar one with the Watervleit Paper Company, is one of the most important items of a personal nature that has emanated from the local paper industry during the past year.

Mr. Gilman was supposed to be a fixture at the Bryant. He was brought here by the late Frank H. Milham, when the Bryant consisted of only a part of the present Bryant division. He has most important items of a personal nature that has emanated from 300 to over 1,000 employees.

Previous to coming to Kalamazoo he was for three years with the Peninsular Paper Company, Ypsilanti, and still earlier than that time general superintendent of the Covington division of the West Virginia Pulp and Paper Company. He knows papermaking from every angle, writing and bond to machine finished book. It has been said of him that he is one of those old type superintendents, "down in the morning before the whistle blows and the last one to quit at night, with a visit every Sunday and holiday to the mill."

He was very prominent in local paper mill circles, being vice president of the Michigan division of the American Pulp and Paper Mill Superintendents Association and is certain to be missed by his associates when he is forced later to move to Watervleit. He succeeds Clarence Harter at the Watervleit Paper Company. His successor at the Bryant is not announced as yet.

The departure of "Dad" Gilman breaks a sextette of Bryant veteran workers, who have all been in the employ of the company for over 21 years and who were given distinct mention in connection with the eighth annual Christmas party, conducted by the Human Relationship Association of the company.

These associates in business lined up in the mill for a group photograph. Each represents a distinct line of effort in the operations of the great concern. They are: George Chandler, 30 years in service, connected with the company's store room; Byron Kurtz, trucker, 33 years on the job, started work here the year the Bryant Paper Company began operations; Jake Sootsman, 32 years with the company, engineer in the No. 3 power plant; Tom Druif, night watchman, and 26 years employed; Chris. Schrier, master pipe fitter, 24 years on the payroll in the maintenance division, and E. H. "Dad" Gilman, general superintendent for 21 years.

All these men have seen the Bryant Paper Company develop from a concern of just moderate proportions to one of the great book mills of America and one of the most important units in the paper industry. Each one in the group has gained special mention.

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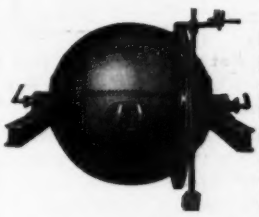

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, December 26, 1928.

BLANC FIXE.—Trading in the blanc five market was moderately active during the past week. Prices are generally holding to schedule. The pulp is still quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is practically unchanged. Shipments against contract are going forward at a satisfactory pace for the season. Prices remain unaltered in most instances. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—Steadiness prevails in the casein market. Quotations on the imported product have advanced slightly. Domestic casein is still quoted at from 15 cents to 16 cents per pound, while imported casein is selling at from 15½ to 16 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is fairly persistent. Prices are generally holding to former levels and shading is infrequent. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Contract shipments of china clay are moving in good volume. Prices on both imported and domestic grades are holding to schedule. Imported china clay is quoted at from $15 to $25 per ton, ship side. Domestic paper making clay is still selling at from $8.00 to $13.00 per ton, at mine.

CHLORINE.—The chlorine market is in a sound position. Supplies are moving into consumption in excellent volume. Prices remain unchanged. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—Prices in the rosin market continue to fluctuate. At the naval stores, the grades of gum rosin used in the paper mills are now quoted at from $9.20 to $9.30 per 280 pounds, ex dock, in barrels. Wood rosin is selling at from $7.20 to $8.00 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—The salt cake market is exhibiting a strong undertone. Offerings are decidedly limited and quotations rule steady and unchanged. Salt cake is still quoted at from $16 to $18 per ton, while chrome salt cake is selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—Business in the soda ash market is fairly satisfactory. Shipments against contracts are moving in a regular manner. Prices remain unchanged. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are still as follows: in bags, $1.32½; and in barrels, $1.55.

STARCH.—No radical changes were recorded in the starch market during the past week despite the upward trend of the grain markets. Demand for this product is normal. Special paper making starch is still quoted at $4.07 per 100 pounds, in bags, and at $4.24 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Offerings of sulphate of alumina are sufficiently large to take care of the prevailing demand. Prices remain steady and unchanged. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.45 and iron free at from $1.90 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Conditions in the sulphur market are quite satisfactory. Sulphur is still quoted at $18 per ton, at mine, in lots of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and nearby carloads the quotation is $21 per ton.

TALC.—The talc market is practically unchanged. Shipments against contract continue to move with normal regularity. Prices remain unaltered. Domestic talc is still quoted at from $16 to $18 per ton, at eastern mines, while imported talc is selling at from $18 to $20 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
News—		
Rolls, contract	Nominal	
Rolls, transient	Nominal	
Sheets	Nominal	
Side Runs	Nominal	
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.00	@ 4.25
Southern	3.75	@ 4.00
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	32.50	@45.00
Straw	52.50	@55.00
Chip	30.00	@42.50
Binders' Boards	65.00	@67.50
Sgl. Mla. Ll. Chip	45.00	@52.50
Wood Pulp	80.00	@85.00
Container	55.00	@60.00
85 Test Jute Liner	55.00	@57.50

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@31.25
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.65	@ 4.40
Easy Bleaching	2.75	@ 2.90
No. 1 strong unbleached	2.50	@ 2.80
Mitscherlich unbleached	2.55	@ 3.25
No. 2 strong unbleached	2.40	@ 2.50
No. 1 Kraft	2.50	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.75	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.50
Mitscherlich	3.00	@ 3.25
Kraft (Domestic)	2.50	@ 3.30
Soda Bleached	3.15	@ 3.30
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.50	@ 1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.00	@11.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.15	@ 2.30
German Blue Linens	2.35	@ 2.55
German Blue Cottons	2.10	@ 2.20
Checks and Blues	1.75	@ 1.90
Lindsay Garments	1.80	@ 1.85
Dark Cottons	1.60	@ 1.65
Old Shopperies	1.50	@ 1.55
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.65
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.35	@ 3.65
Domestic	3.25	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.55	@ 2.65
White envelope cuttings	3.25	@ 3.50
Flat Stock—		
Stitchless	1.70	@ 1.80
Overissue Mag.	1.70	@ 1.80
Solid Flat Book	1.65	@ 1.75
Crumpled No. 1	1.15	@ 1.25
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.70	@ 1.80
New B. B. Chips	.65	@ .75
New Env. Cut	2.40	@ 2.60
Manilas—		
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.80	@ .85
Container	.65	@ .70
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.80	@ 1.90
News—		
No. 1 White News	1.75	@ 1.80
Strictly Overissue	.85	@ .95
Strictly Folded	.70	@ .75
No. 1 Mixed Paper	.50	@ .60
Common Paper	.35	@ .40

CLAY

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For Coating and Filling

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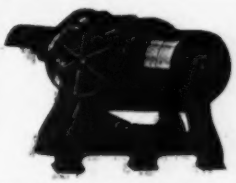
GIANT

RAGS — BURLAP
BAGGING — ROPE

JUTE BUTTS, MAGAZINES, CATALOGS OLD PAPERS, THREAD WASTE AND ALL GRADES OF RAGS CUT QUICKLY AND EFFICIENTLY WITH THE



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This is the GIANT 2A CUTTER WITH A CAPACITY OF 3000 lbs. PER HOUR
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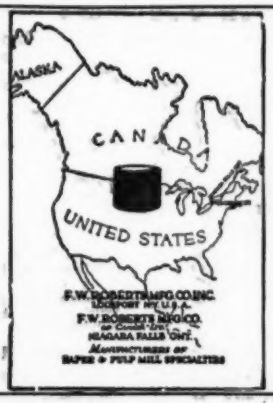

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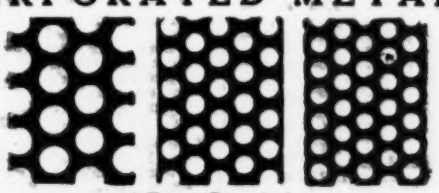

of Every Description

For Pulp and Paper Mills

THE HARRINGTON & KING PERFORATING CO.

5652 Fillmore St., Chicago, Ill.

NEW YORK OFFICE: 114 Liberty St.

Twines

(F. o. b. Mill)

No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¼	@	.06¾
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¾
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¾
Wood Pulp Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¾
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	37.50	@	41.00
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined—			
(Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.95
White Env. Cuttings	2.90	@	3.00
No. 1 Soft Shavings	2.50	@	2.60
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.90	@	1.00
Ledger & Writings	1.55	@	1.65
Solid Books	1.25	@	1.35
Blanks	1.70	@	1.80
Krafts	1.90	@	2.05
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.90	@	1.00
Folded News (oversize)	.65	@	.75
Old Newspapers—			
No. 1	.65	@	.75
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.70	@	.80
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.10	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	.20	@	.22
Fine	.18	@	.26½
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C	.06	@	.07½
Book, Coated	.10	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
News	.03¾	@	.04
No. 1 Jute Manila	.08½	@	.09
Manila Sul., No. 1	.04½	@	.06
Manila No. 2	.04	@	.04½
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.07	@	.07½
Common Bogus	.03	@	.03½
Straw Board	52.50	@	75.00
News Board	32.00	@	40.00
Chip Board	32.00	@	38.00
Wood Pulp Board (Carload Lots)	4.50	@	5.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	53.00	@	55.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.93	@	2.08

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.08½	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Washable, No. 2	.03	@	—
Fancy			
Cottons—According to grades—			
Blue Overall	.07½	@	.08
New Blue	.03	@	.03½
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.50	@	2.60
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.96	@	2.00
Writing Paper	1.65	@	1.70
No. 1 Books, heavy	1.50	@	1.60
No. 2 Books, light	1.20	@	1.25
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common Paper	.50	@	.55
No. 1 Mixed Paper	.65	@	.70
Straw Board, Chip	.65	@	.75
Binders Board, Chip	.65	@	.75
Overissue News	.90	@	.95
Old Newspaper	.70	@	—

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2—			
Repacked	.02½	@	.02¾
No. 2 (Roofing)	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09¼	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¼
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05½	@	.06½
No. 2 Kraft	.03¾	@	.04½
Common Bogus	.02	@	.02¾
Delivered New England points			
Straw Boards, rolls	.009		52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board		@	32.50
Chip Board			30.00
Single Manila Lined Chip			45.00
Single White, Patent Coated Newsboard Bender	70.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.50	@	2.60
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.55	@	1.60
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.20	@	1.25
White Blank News	1.70	@	1.75
Old Kraft	1.85	@	1.90
Print Manila	.80	@	.90
No. 1 Mixed Paper	—	@	.55
Overissue News	.70	@	.85
Old Newspapers	.65	@	.75
Box Board, Chip	.55	@	.60

Bagging

(F. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.50
Manila Rope—			
Foreign	3.50	@	3.75
Domestic	4.00	@	—
Mixed Strings	.90	@	1.00
Jute Wool Strings	—	@	1.00
Scrap Burlaps	1.50	@	1.60
Scrap Sisal	1.60	@	1.80
Scrap Sisal for anreading	1.75	@	2.00
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	1.90	@	2.00

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09	@	.10
Silesias, No. 1	.06	@	.06½
New Unbleached	.09½	@	.10
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04¾
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03¾
New Canvas	.08	@	.08¾

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	—	@	2.50
Thirds and Blues—			
Repacked	2.00	@	2.15
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.55	@	1.60
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.25	@	5.40
New Checks & Blues	4.25	@	4.50
Old Fustians	1.90	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¼	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

Pulp

(F. o. b. Mill)

Ground Wood	30.00	@	31.00
Sulphite easy bleaching	62.00	@	—
Sulphite news grade	62.00	@	—
Sulphite, bleached	75.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.70	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.11½	@	—
Fancy Shirt Cuttings	.05½	@	—

PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.
10 EAST 39th ST., NEW YORK

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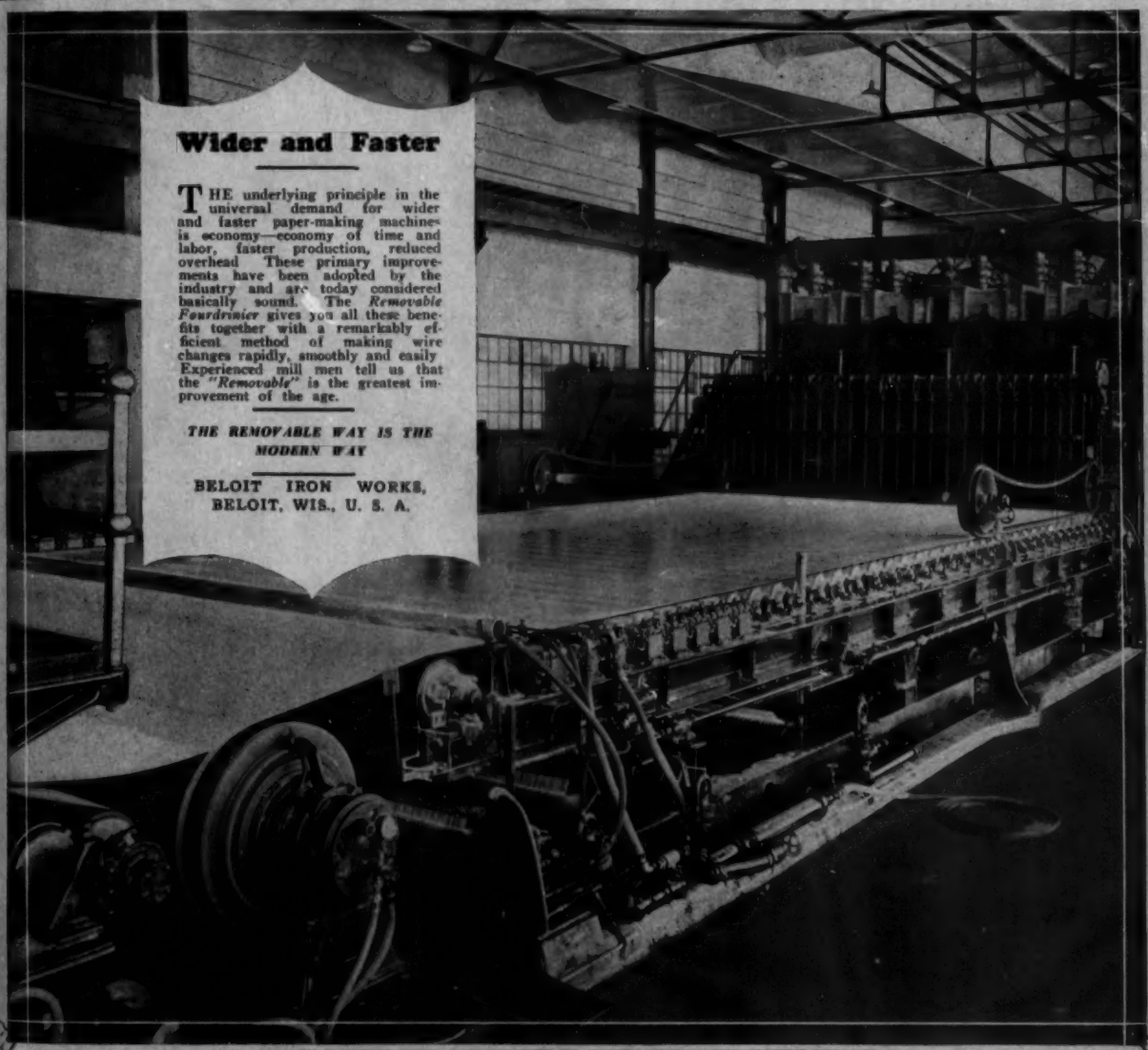
Wider and Faster
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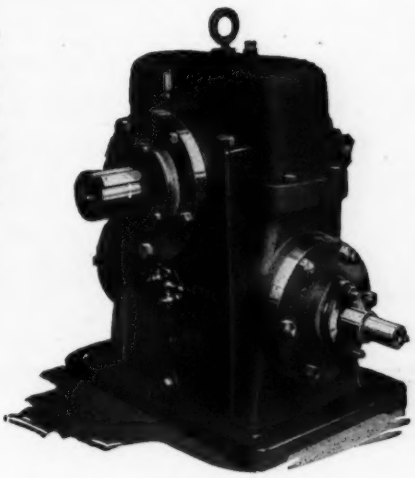

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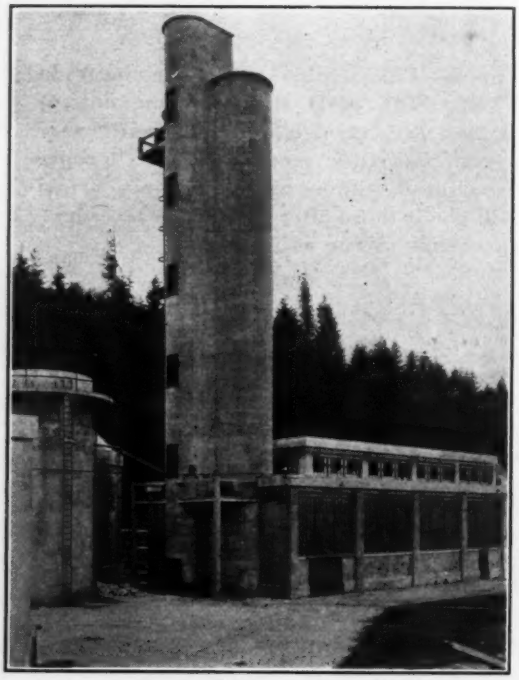

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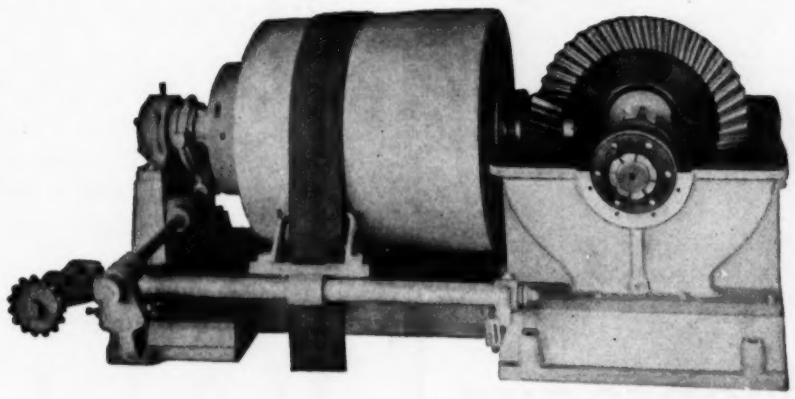

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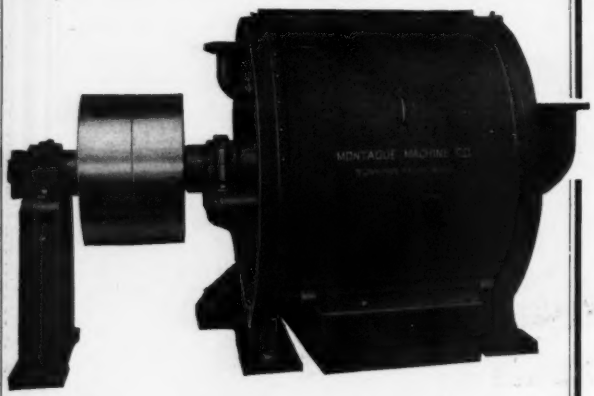

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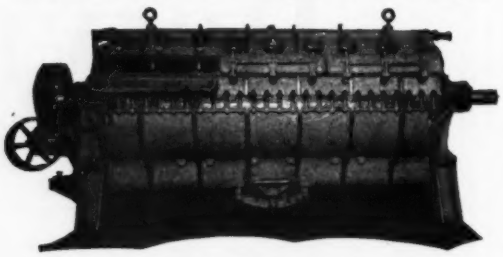

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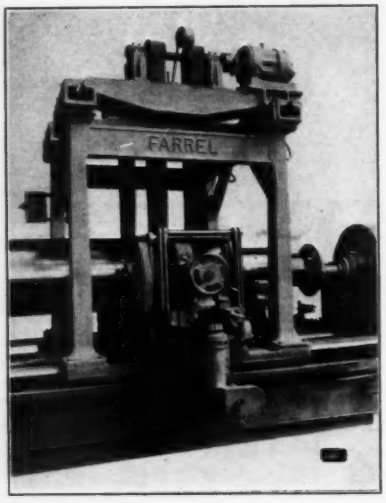

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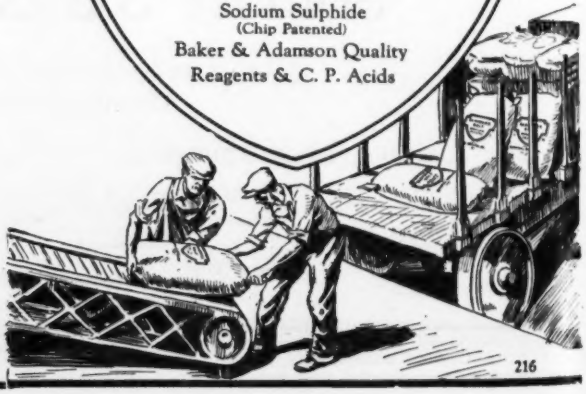

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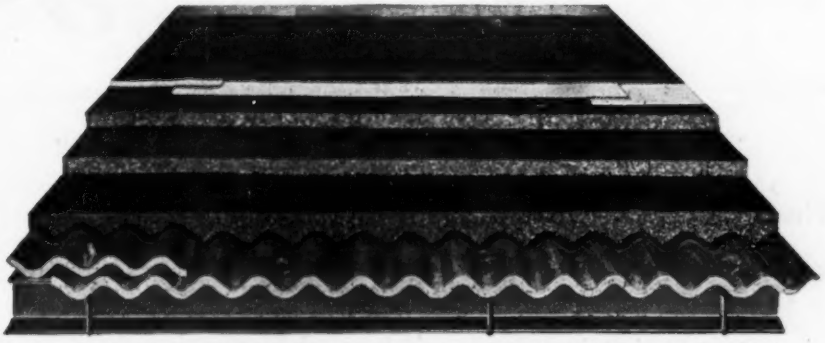

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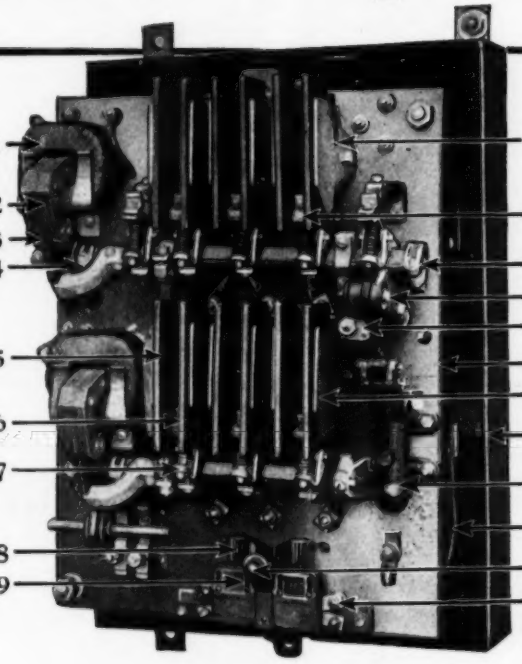
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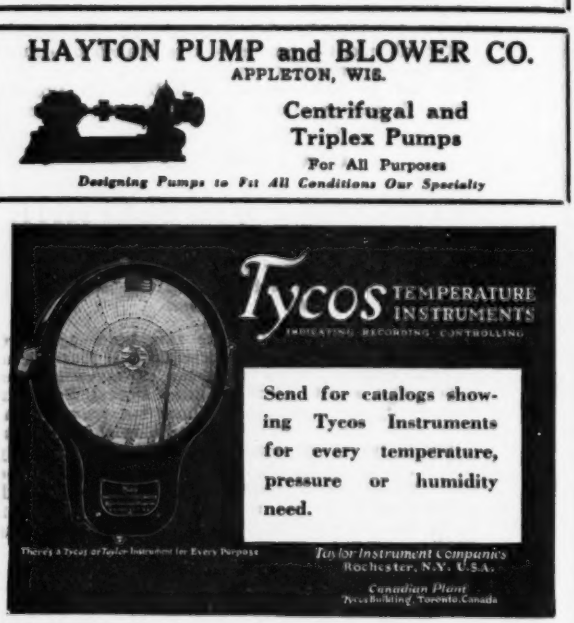
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ASSISTANT SUPERINTENDENT-CHEMIST College graduate. Ten years experience in rag papers and specialties. Address, Box 28-828 care Paper Trade Journal. t.f

BOARD MILL SUPERINTENDENT wants new connection. 25 years experience on all grades of box board and test liners. Best of references. Used to fast running machines. Can get production and quality. Address, Box 28-870, care Paper Trade Journal. t.f.

EXECUTIVE-SALESMAN—Age 34, many years experience with large paper manufacturer, seeks connection with manufacturer, converter or large jobber. Willing to travel. Highest credentials as to ability and character. Address, Box 28-900, care Paper Trade Journal. J-10

COATED PAPER MAN—Mechanical, efficient on labor saving equipment. Expert colorist, in the use of all materials, and formula development. Many years experience on all grades. Employed, best of references. Address, Box 28-858, care Paper Trade Journal. J-10

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PAPER MILL EXECUTIVE—35 years of age with exceptional experience in paper manufacturing, selling and general business. College education and successful past record. Will consider new connection with good opportunity for future. Address, Box 28-872, care Paper Trade Journal. D-27

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MACHINE TENDER—Fourteen years experience on writing, book, bond and sulphite specialties, wants position. Also first-class man on Kraft papers. Address, Box 28-889, care Paper Trade Journal. D-27

SUPERINTENDENT—25 years practical experience, 15 years as superintendent on all grades of folding box and container board. Have successful record for quality and production. Can furnish good references. Address, Box 28-819, care Paper Trade Journal. J-3

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MILL CONNECTION WANTED—Capable experienced salesman desires mill connection. Years of experience. Willing to travel. Highest credentials as to ability and integrity. Address, Box 28-839, care Paper Trade Journal. D-27

POSITION WANTED—Boss beaterman or beater engineer. Experienced on most all grades, good on colors. 38 years old, steady. Address, Box 28-758, care Paper Trade Journal. J-3

GUM, coated and specialty paper superintendent with twenty-one years experience, desires to make a change on or after January 1, 1929. Address, Box 28-857, care Paper Trade Journal. D-27

SALESMAN—Age 33, desires lines on strictly commission basis. Years of experience selling wrapping papers, bags and allied products to jobbers in Chicago. Highest credentials as to ability and integrity. Address, Box 28-901, care Paper Trade Journal. J-10

MILL CONNECTION WANTED—Capable and experienced salesman desires mill connection. Long experience. Travel if necessary. Highest credentials as to ability and integrity. Address, Box 28-902, care Paper Trade Journal. D-27

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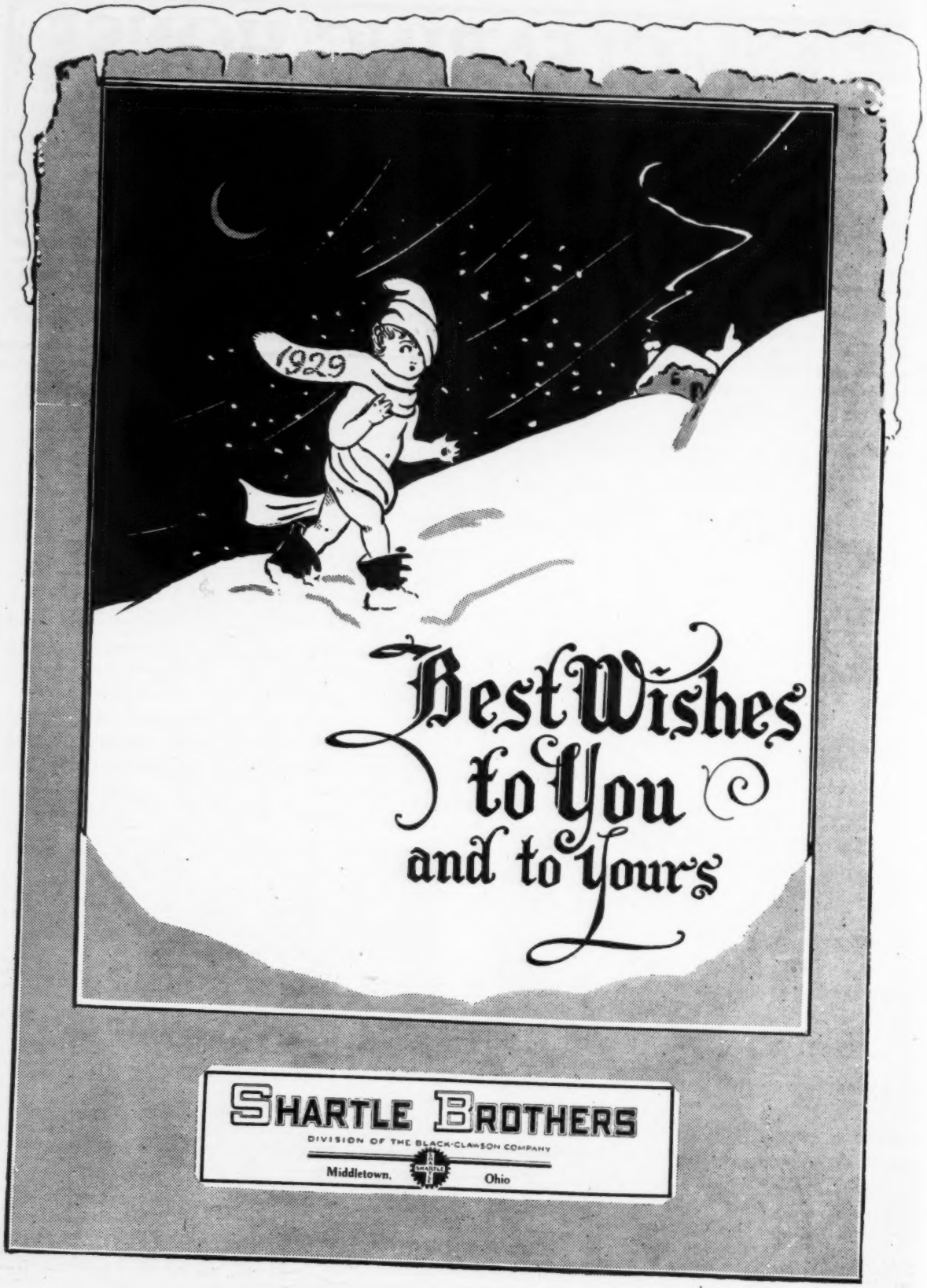
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WANTED—Odd lots, rejected or cull rolls of paper. W. A. Johns Paper Co., 526 W. 18th St., Chicago. t.f.

WANTED—Second-hand Drum Sheeter for handling small orders, Kidder Slitter and two or three color Kidder Rotary Press. Address, Box 28-888, care Paper Trade Journal. D-27

WANTED—Stack of Calenders for paper machine trimming 152". Address, Box 28-882, care Paper Trade Journal. D-20

WANTED—Roll sheet cutter, hand operated or automatic, in good condition. Address, Box 28-897, care Paper Trade Journal. D-27

WANTED—Two used Dryers 36 1/16" diameter, 90½" face journals, 4¾ x 8. Two used Dryers 36 1/16" diameter 68" face journals, 4¾ x 5½. Address, Box 28-898, care Paper Trade Journal. J-10

WANTED—Automatic Grocery Bag Machines to make ¾ to 25 lb. bags; preferably Potdevin machines; also Flat and Square Machines. Address, Box 28-899, care Paper Trade Journal. D-27

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SKINNER STEAM ENGINE—Cylinder 15" diameter, 18" stroke. Horizontal automatic high speed. White auto. fly wheel governor 72" x 15", with balance wheel 72" x 18". Skinner auto. lubricating system, enclosed center crank, heavy duty frame sub-base. DEANE STEAM PUMP: 9 x 10 triplex single geared power plunger pump, 7" suction, 6" discharge, with extension sub-base to receive motor drive, including Hill valves and special gears. 7' noiseless 5" chain drive. VILLAGE OF SKANEATELES, N. Y. J-17

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Middletown, Ohio tf.

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WANTED—2 W. & P. Pulpers, 2 Filter Presses and 1 Rogers Wet Machine. Address, Box 27-285, care Paper Trade Journal. tf.

WANTED TO BUY—A Calender Roll Grinder wide enough for a 90" face. Must be in good condition and the price must be right. Address, Box 28-826, care Paper Trade Journal. J-3

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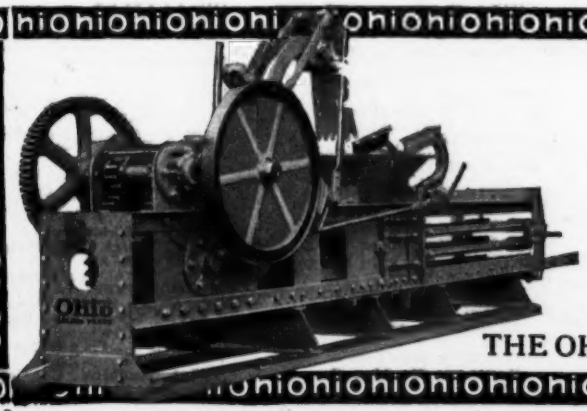
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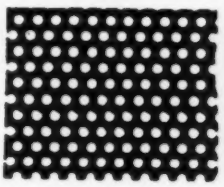

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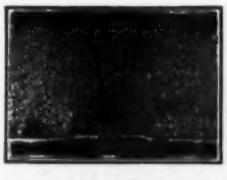

Note: Flange Fits Flush. No Metal on Inside.

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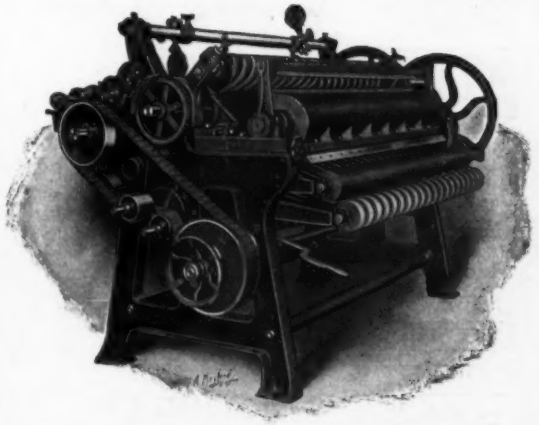

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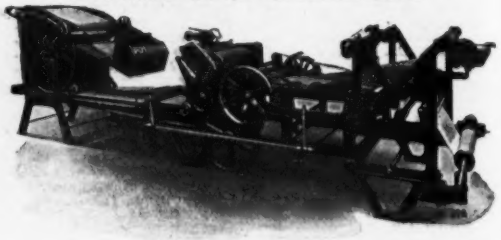

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